

MICHIGAN FARMER

AND
LIVE STOCK
PUBLISHED WEEKLY.

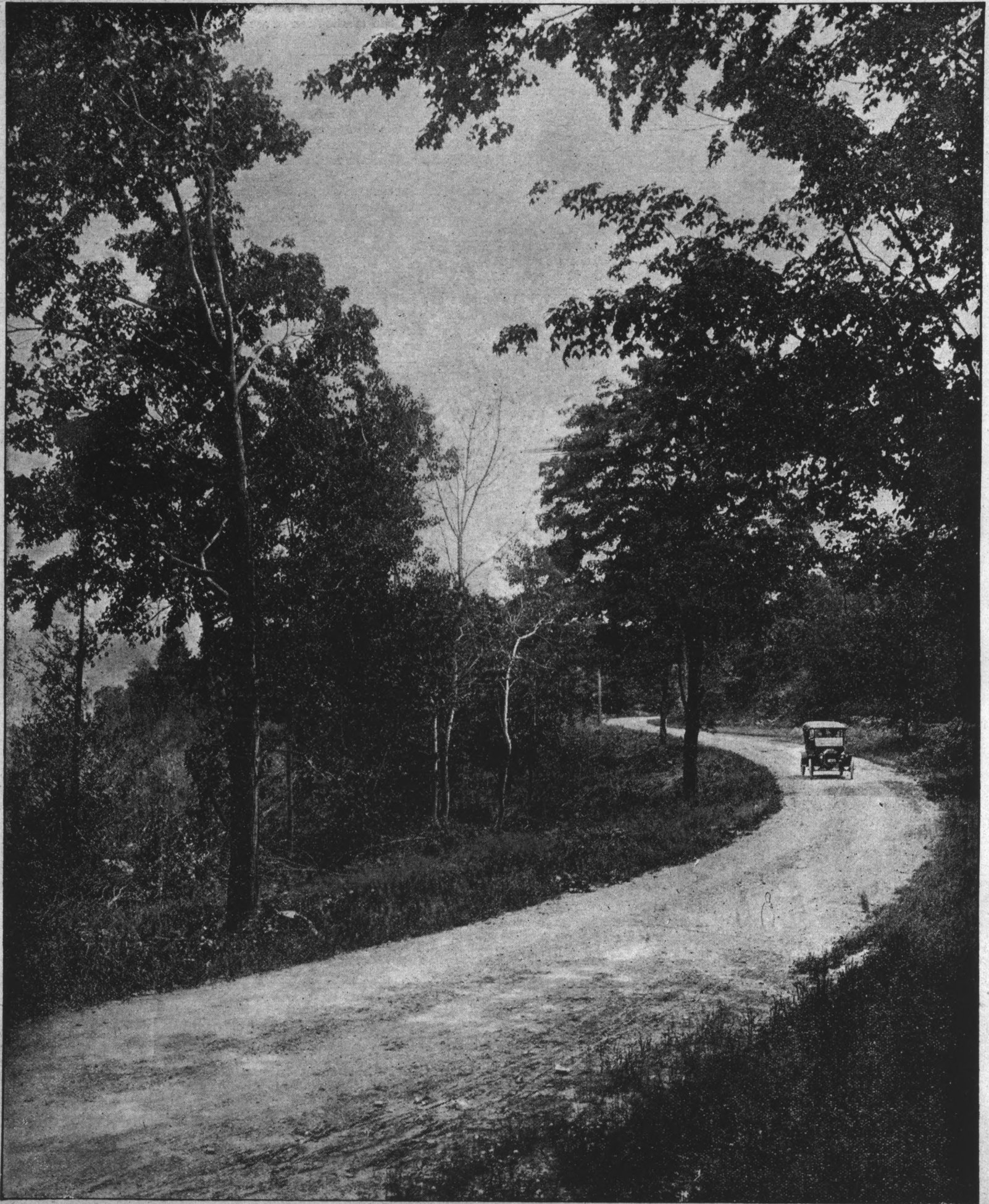
JOURNAL.
ESTABLISHED 1843.

The Only Weekly Agricultural, Horticultural, and Live Stock Journal in the State.

VOL. CXLVII, No. 7
Whole Number 3901

DETROIT, MICH., SATURDAY, AUGUST 12, 1916

50 CENTS A YEAR
\$2 FOR 5 YEARS



"Good Roads Break the Dawn of a New Era in Country Life"

The Michigan Farmer

Established 1843.

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The Lawrence Publishing Co.

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39 to 45 Congress St. West, Detroit, Michigan
TELEPHONE MAIN 4525.NEW YORK OFFICE—381 Fourth Ave.
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TERMS OF SUBSCRIPTION:

One year, 52 issues.....50 cents
Two years, 104 issues.....1.00
Three years, 156 issues.....1.25
Five years, 260 issues.....2.00

All sent postpaid.

Canadian subscriptions 50c a year extra for postage.

RATES OF ADVERTISING:

40 cents per line agate type measurement, or \$5.60 per inch (14 agate lines per inch) per insertion. No adv't in serial for less than \$1.20 each insertion. No objectionable advertisements inserted at any price.

Mem Standard Farm Papers Association and Audit Bureau of Circulation.

Entered as second class matter at the Detroit, Michigan, postoffice.

DETROIT, AUGUST 12, 1916

CURRENT COMMENT.

The Milk Shortage. Many consumers are at the present time experiencing an unusual shortage of table milk and cream. In fact, table cream is impossible to get in some cities at the present time, and even the distributors in the larger cities are experiencing unusual difficulty in getting enough milk to supply their customers. The extremely hot weather of recent weeks and the consequent drying up of the pastures and shrinkage in the milk flow is the general excuse offered for this condition. While this unusual condition is doubtless the immediate reason for the milk shortage at the present time, there are other contributing factors which the city distributors of this product would do well to consider.

Dairy farmers generally have come to recognize the fact that milk production is a losing game at present prices for whole milk, especially when production must be stimulated by the use of expensive supplementary feed when the cows are on pasture, hence the general disinclination to take the only measures possible to keep this product at its maximum under unfavorable summer conditions, such as have prevailed during the past month or six weeks. Nor are they anxious to increase the production of market milk by adding to their herds by purchase of cows from outside of the market milk section, when available data from all sources indicates that they are not receiving compensatory prices for the product. Several surveys made by our own agricultural college in different dairy sections of the state, in which some of our very best dairy herds have been included, have proven conclusively that under present conditions the cost of producing milk in this state is considerably above present market values. Similar data gathered in other states afford additional proof of the same fact. Under these conditions it is not at all surprising that the available supply of market milk is inadequate to supply the needs of our increasing population. This condition is general, rather than local and the only adequate remedy is the payment of a standardized and compensatory price which will allow a reasonable profit above the actual cost of production on the dairy farms of the state and country.

The sooner the milk distributors of the large centers of population recognize this fact the less frequent will be the periods of shortage of table milk and cream and the more stable will become the supply of these necessary products. It will be better for both distributors and consumers, as well as farmers, if the former recognize the obvious situation in advance

of actual compulsion by force of circumstances.

The Horse Breeding Industry.

Since the almost universal adoption of the automobile for highway travel, and the rapid introduction of auto trucks for heavier transportation over country roads as well as city streets, many pessimistic prophecies have been heard regarding the future of our horse breeding industry. Under normal conditions, it appeared that there might be some foundation for the idea that there would be a noticeable diminution in the demand for American bred horses of all grades, but under the conditions which actually obtain nothing could be further from the fact. The demand created by the European war has taken from the United States during the 21 months ending June 1, 1916, 611,790 horses valued at \$134,943,456, and 167,387 mules valued at \$34,198,955. There is no present indication of a falling off in this demand which is more in evidence at the present time than ever before. Nor will the foreign demand for our horses cease with the ending of the war. Experienced horsemen are agreed in the opinion that foreign countries will make very heavy purchases of horses in America for years after the close of the war, since the United States is in the best position of any country to furnish the animals to rehabilitate their depleted horse population.

With this fact in mind, there is every reason to believe that horse breeding will continue to be a remunerative side line for the farmers of Michigan and the country who have good mares available for breeding.

The State Fair.

With the opening date of the Michigan State Fair, (September 4), only a few weeks away, action should not be longer delayed by farmers who have any products of superior quality which might be exhibited with advantage to themselves or to the public who will attend. This should be a duty as well as a pleasure, to the end that the State Fair may adequately represent the great and varied agriculture of our state. The State Fair offers a maximum of educational value to the farmers of the state who compete for prizes in the many classes in which exhibits may be entered. It is only when competing for honors in any of these classes that the other exhibits will be examined with the care which will afford the greatest reward in an educational way to the fair patron.

But whether circumstances permit the making of entries or not, no Michigan farmer can well afford to miss the State Fair. From an educational standpoint it will be worth many times the cost of attending, while the clean entertainment features will prove attractive and well worth while to himself and family, affording a maximum of enjoyment from a needed and well earned outing.

There are doubtless some Michigan Farmer readers who have never found it possible or convenient to attend the State Fair. For the benefit of these and others who may not fully understand the character of the organization under whose auspices it is held, we will publish a brief history of the State Fair in the next issue. In the meantime it will be the part of wisdom for every reader who can possibly arrange to that end to plan on attending this year's State Fair during the ten days beginning with September 4.

The Expense of Hand Labor.

In a trip of some 60 miles through a comparatively new section of the state, 50 people, including women and children, were observed hoeing farm crops. In most cases the corn, or potatoes, or beans, as the case might be, were drilled instead of checked. In many instances it was doubtless impossible to fit the ground for these crops as thoroughly as would have been desirable,

on account of the wet weather of early spring, thus permitting the weeds to get a start. But, allowing for extraordinary conditions, it would seem that in this particular section of the state, the practice of using hand labor in caring for the staple farm crops is a common one. In special cases the use of hand labor in cleaning an ordinary farm crop may be necessary and profitable, but as a general practice this seems questionable. With suitable equipment in the way of comparatively inexpensive implements for the preparation of the soil and the cultivation of the crops, and with the several operations done at as nearly the right time as possible, the expense of hand labor in cleaning cultivated crops of weeds can be largely, if not entirely eliminated. This is a phase of farm management well worthy of careful study by farmers who were compelled by the unfavorable weather conditions of the present season to devote expensive hand labor to the eradication of weeds from their crops.

BEWARE.

There is a person who signs himself E. D. Barnes, who is taking subscriptions to the Michigan Farmer. He is a fake. He usually takes orders for the Michigan Farmer and other papers combined and at less than the regular price. If a person offers the Michigan Farmer at less than our regular price it would be a good idea to have him arrested, because he is almost certain to be a faker. This man Barnes gives a receipt printed on white paper; he had these printed himself—our receipts are not printed on white paper. Look out for him. He may not always sign his name Barnes, so look out for the white paper receipts.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—Active fighting is reported on all fronts. The British are pushing their offensive along the Somme river in Flanders where they have advanced beyond Pozières toward the heights of Martinpuich. With flaming liquids the Germans wrested some of the newly gained ground from the British troops but through the fierce counter attacks of Australian and other provincial soldiers the territory was practically all retaken.—A new Teutonic drive along the Meuse before Verdun was successful until the French by artillery and infantry attacks drove back the invaders and occupied advanced positions.—While the Teutons have launched an offensive against the extreme southern end of the Russian army, the latter continues to advance before Lemberg, having taken the town of Zalocz 53 miles east of the Galician capital, which marks an advance of 25 miles during the past ten days. They have also taken five villages to the southeast of Lemberg.—The Caucasian army is again active and considerable progress is reported.—Turks attacked English forces near the Suez canal but were defeated and are now being vigorously pursued. The Serbians have won another victory over the Bulgarians on the Macedonia front.

Information comes through England that there is possibility of war in South America with Peru and Venezuela opposed to Columbia and Ecuador. It is stated that the former two countries have secretly agreed to take valuable lands from the others.

Preliminary documents have been signed by the state offices of Denmark and the United States for the transfer of the Danish West Indies to the United States for the sum of \$25,000,000. The matter is to be taken before the Danish Rigsdag Thursday of this week.

The conference between commissioners of the Mexican and American governments to consider a peaceful settlement of issues growing out of the recent strained relations between the two governments will probably be held next week somewhere in the United States. The Mexican commissioners have already been chosen.

By establishing a war usury bureau the German government is completing its control over private concerns and affairs. This bureau metes out punishment to food fakers, food adulterers, swindlers, those who charge more than the minimum prices for foods, clothing and other necessities. Another commission is given power to compel tradesmen to open their books, business records and correspondence, etc.,

while stores and warehouses must open their buildings instantly for inspection.

National.

A conference of men representing four railroad trainmen brotherhoods is in session in New York City reviewing the vote of 400,000 trainmen who have balloted upon the proposition of calling a general strike on 225 railroads in the United States unless the companies allow their demands for an eight-hour day and time and a half for overwork.

According to officials of the bureau of mines, the opening of new oil wells in Oklahoma and the working of old wells to capacity ought to supply the market with sufficient gasoline to force prices from their present high level.

Sunday established another record in the number of new cases of infantile paralysis in New York City by adding 198 victims to the list. In all there have been 5,023 victims of whom 1,099 died.

Bandits robbed a pay car of the Burroughs Adding Machine Company, of Detroit, of \$32,500 last Friday afternoon. To date the criminals have not been apprehended.

Charles Evans Hughes, republican candidate for president of the United States, opened his campaign in Detroit on Monday.

A SOLICITOR WANTED.

We want a solicitor at each one of the following fairs to solicit subscriptions for the Michigan Farmer. A good solicitor can make good wages. How many can you attend? We furnish all supplies free. Address The Michigan Farmer, Detroit, Mich.

MICHIGAN FAIRS FOR 1916.

The following is a complete list of Michigan fairs for 1916 as compiled by the secretary of the Michigan Association of Fairs, with the name of the secretary and date of each.

Owosso, W. J. Dowling, Aug. 23-25.
Howell, R. D. Roche, Aug. 27-Sept. 1.
Caro, F. B. Ransford, Aug. 29-Sept. 1.
Ithaca, A. McCall, Aug. 29-Sept. 1.
Bad Axe, A. Cornell, Sept. 5-8.
Detroit, G. W. Dickinson, Sept. 4-13.
East Jordan, Dwight L. Wilson, Sept. 5-8.
Hastings, John H. Dawson, Sept. 5-8.
Iron River, J. W. Byers, Sept. 4-6.
Mt. Pleasant, T. Wayling, Sept. 5-8.
Marquette, W. A. Ross, Sept. 5-9.
Cadillac, Perry F. Powers, Sept. 12-15.
Escanaba, John L. Loell, Sept. 12-15.
Greenville, D. L. Beardslee, Sept. 12-16.
Holland, J. Aranshorst, Sept. 12-15.
Harrison, W. L. Harper, Sept. 12-15.
Ironwood, J. S. Kennedy, Sept. 15-17.
Petoskey, E. A. Botsford, Sept. 12-15.
Jackson, W. B. Burris, Sept. 12-16.
Standish, H. W. Pomeroy, Sept. 13-15.
Adrian, F. A. Bradish, Sept. 18-22.
Bear Lake, H. R. Brodie, Sept. 19-22.
Croswell, D. E. Hubble, Sept. 19-22.
Camden, S. E. Houghy, Sept. 19-22.
Cass City, H. L. Hunt, Sept. 19-22.
Evart, J. A. Hall, Sept. 19-22.
Grand Rapids, Lyman A. Lilly, Sept. 18-22.
Gladwin, F. E. Myers, Sept. 19-22.
Hart, G. E. Wyckoff, Sept. 19-22.
Marshall, Thos. W. Bigger, Sept. 18-22.
Traverse City, Charles B. Dye, Sept. 18-22.
Allegan, Swan M. Sequist, Sept. 26-29.
Armada, Orvy Hullett, Sept. 27-29.
Alpena, Fred L. Olds, Sept. 26-29.
Bellaire, Geo. F. Frink, Sept. 26-29.
Burt, David McNally, Sept. 26-28.
Big Rapids, Edward Dresser, Sept. 27-29.
Charlotte, Vaughn G. Griffith, Sept. 26-29.
Centerville, George H. Denel, Sept. 26-30.
Gaylord, Claude E. Shannon, Sept. 26-30.
Hillsdale, C. W. Terwilliger, Sept. 26-30.
Houghton, I. N. Haas, Sept. 26-30.
L'Anse, W. F. Menge, Sept. 29-30.
Milford, George S. Potts, Sept. 19-22.
Manistiquie, Ed. Kalbfleisch, Sept. 27-29.
North Branch, Adam Wingert, Sept. 26-29.
St. Johns, C. S. Clark, Sept. 26-29.
Stephenson, Charles G. Swanson, Sept. 26-29.
Sandusky, W. A. Moore, Sept. 26-29.
Tawas City, Alfred J. Noll, Sept. 27-29.
West Branch, W. A. Crandall, Sept. 27-29.
Fowlerville, Geo. A. Newman, Oct. 3-6.
Hartford, Stephen Doyle, Oct. 2-6.
Imlay City, Frank Rathsborg, Oct. 3-6.
Kalamazoo, Geo. E. Fritz, Oct. 2-6.
Saginaw, F. F. Kleinfeld, Oct. 3-6.
Wolverine, Clare D. Scott, Oct. 3-5.
Allenville, P. A. Lupenitz, Oct. 11-12.

The Bean Situation

A LONG time before Doctor Wiley ever made experiments on various foods one of the old worthies of his day experimented on the use of pulse, as is told in the Book of Daniel. Pulse, according to the dictionary in this case refers to a protein diet of peas and beans.

The results of this test was so overwhelming in favor of the vegetable food as compared to packing-house products, that the growing of beans has become noted the world over. Michigan's contribution toward correct diets under normal conditions is five or six million bushels of white beans, besides some kidneys, Swedish and other minor types. In round numbers this state has prior to the sub-normal crop of 1915, grown around 75 per cent of the total white pea bean crop of the United States.

The Business of Distribution.

Around this business has grown up a system of handling the crop that has involved several million dollars of investment. Special machinery is used to clean and prepare the beans for the use of the consumer. One of the strongest jobbing associations in any produce line has organized distribution, established grades, provided for inspection and for arbitration of claims.

A session of the arbitration committee involving disputed grades and facts of delivery would well serve as a model for other business lines. It was at first viewed by the out of state buyer as open to suspicion and favoring the seller, but the scrupulous adherence to the square deal idea has made the buyer repose supreme confidence in this procedure. It is the lawyerless court which knows no technicalities, delays nor appeals. When the award is made the check must follow to close the deal. That everybody is pretty well satisfied argues the merit of the judgments given. Colonel Pope in speaking of salesmanship says that co-operation and organization must go together and the merit of this selling organization was so apparent that practically all the co-operative elevators are members of the selling organization.

Class Co-operation.

A new chapter of co-operation in the bean situation was added in the last year when the growers and dealers practically agreed upon the crop conditions and quantity available for sale. The growers marketed the crop conservatively along lines that provided a nearly constant flow of product with profit to all concerned. The crop of 1915 proved that beans are a staple food product and that consumers demand beans and that they will pay the price. The jobber and consumer have been educated to the point of paying what might be called the economic food value and a compensatory price to the grower.

Crowding Out the Speculator.

The higher the starting price of a primary food product the less opportunity for the speculator. When a staple is underpriced the speculator who is not a regular in the merchandising, hopes to make the margin between the low cost price and that paid by the consumer as his gain. The starting price of the crop for 1915 absorbed this margin for the grower and was higher in Michigan than in other bean growing sections.

There is no law of supply and demand that makes the price. Supply and demand are but two views of the same thing. When both buyer and seller are acquainted with the facts, each is in position to deal fairly. When the bean growers and jobbers meet in Grand Rapids early in September each of these bodies will have the best information possible regarding the growing crop. At the present time each day's drought is shortening the available supply. A prominent grower said a good rain on bean fields would be worth \$1,000.

One of the elements that the grower

has injected into the matter of price making is the extra hazard of this crop. One year out of five, on an average, the bean crop is disastrous for some reason, usually a matter of weather conditions. The crop for 1916 is now at the critical period. Idaho and Colorado have increased acreage. Where potatoes were king in the Greeley district in Colorado there is now a considerable acreage of white beans. Manufacturers of bean handling machinery are finding inquiries and accepting orders, where beans were never before a commercial feature.

Have a Representative at the Grand Rapids Meeting.

The date of the growers' meeting at Grand Rapids will be determined by crop conditions as the last word in crop information is essential. It is especially desired that bean growers plan among themselves to have a reasonable sized delegation from the main bean growing centers. No credentials will be required but if the delegations be reasonably well scattered throughout the county it would give more complete advice as to the crop condition at the last moment before the deter-

so it is ready for use when the time comes it must be kept in the best of condition. Breakdowns in the midst of harvest or haying or other work can sometimes be traced directly to having left the machinery in the field where it was last used and exposed to the weather.

I have always found it a good practice to immediately put a machine under cover when I am through using it. It takes no more time to pull the machine in from the field at the end of the day's work than it does to haul it in sometime later, and the few minutes spent in cleaning and oiling it before running it into the shed will be amply rewarded by the good condition it is found in when taken out again. When I cut the last swath of grain in the harvest field I pull in the binder, take off the canvasses, remove the sickle and clean the grasshoppers, bugs and dirt from the rollers. It takes only a little while to go over the machine and tighten the nuts and put oil in the oil holes. Such care as this is just as important to the mower after haying and the plow after plowing as well as every other piece of machinery on the farm. If no machine shed is already on the farm, it will be a good investment to build one. The extension in

will try and prepare the ground for wheat. We ought to get this field into wheat on time.

It has seemed to be my duty to be away from home most of the time this summer. I have had the opportunity of observing conditions in many sections of the state. The weather conditions for dairy farm work have been the worst I ever saw. I am not the only man who has a vacant field this year. We find this in almost every neighborhood on heavy land. The principal cause was extreme wet weather early in the season, but another cause has been lack of suitable labor. This labor problem has affected haying and harvesting materially. Many farmers and their families have had to work hard and the work has not been satisfactorily done at that. I have heard more farmers talk about selling the farm than ever before. They are discouraged. It takes a strong man to keep cheerful under such circumstances. The hot weather has had a lot to do with much of this discontent. But the farm labor problem is in bad condition. The only solution, I think, is to cut down the area of cultivated crops until conditions improve. Put the land into pasture or let it go without crops. Take care of what you can. It is the only way and will pay best in the long run. If we cut down the area of crops it will in a short time have an effect on the market and prices will be better. That is a good way to control the market. I would not advise it ordinarily, but if the labor is not to be had it is the only practical way and will bring returns, too. Let every farmer leave out one or two fields from crop production and the market will feel it in a very short time. This extreme activity in the industrial world may not last forever, and help may be more plentiful. The farmer could get more help if he could afford to pay the price, but he is paying more now than his business will warrant. Stop some of the business, cut the labor bill in two. We will get nearly as much for the crops and let the agricultural prices catch up with the business world.

I don't mean to grow poor crops. Grow better crops but less of them. Put in what can be cared for with what labor is available, but do it well. Produce more on an acre, but less acres. It is trying to crop so much land and half doing it, that cuts down the farmer's net profits. Let the labor problem work out a little. We can't do any different. The farmer can afford to pay \$5 per day to the farm worker at present prices for crops.

All over the state, with very few exceptions, the hay crop is simply immense. We have every barn full to the peak, and no place to put the second crop of alfalfa. And still one field to cut which should have been plowed up last spring for corn. It was clover seed last year. It is not a heavy crop, but a fair one if it could have been cut on time it would have been prime hay to feed. I am debating this minute in my mind, whether to cut this for hay or have it perhaps for seed. We could cut high with binder and leave the clover or let it go entirely and plow it down for corn or beans next year. This is on a farm I rent for pasture. About one-half of the farm is permanent pasture with splendid water facilities, and this 30 acres we have cropped. It is so far away we can never manure it. There is plenty of other work to do, in fact, more than we can do and do it well. Why not plow this down this fall for humus? I never did such a thing before. But we have plenty of hay, the price will be low, I feel certain, and this crop will do the land good. There is a good sprinkling of clover in this hay, but this is dead ripe and dried up. It is just as good for humus, however. It looks to me as if we must cut cross-lots somewhere. This would help out on the labor materially. I will talk it over once more with my man, but I believe we will plow a crop under and cultivate corn. COLON C. LILLIE.



An Unusually Good Stand of Beans, which Should Produce a Healthy Crop of Beans well Suited for Seed Purposes for 1917.

mination of the marketing price for starting the crop of 1916. In each community of bean growers the spirit ought to be such for one man to say to his neighbor, you go or I will go, and then see that enough money is raised to pay the necessary expenses.

If the United States government were to ask the available Michigan bean supply in case of national need, the Michigan bean growers ought to be able to make the answer at their convention, and make this event a feature of the bean business quite as much as growing the crop. Circulars will be sent out soon advising the exact date and plan of the meeting. Hon. A. B. Cook, of Owosso, and Alex. Pullar, of Freeland, are respectively president and secretary of the Michigan Bean Growers' Association. The federal government through the bureau of crop estimates will have their report ready at that time. The state market office is also investigating crop conditions and market facts relative to the bean crop.

JAS. N. McBRIDE,
State Director of Markets.

CARE OF MACHINERY.

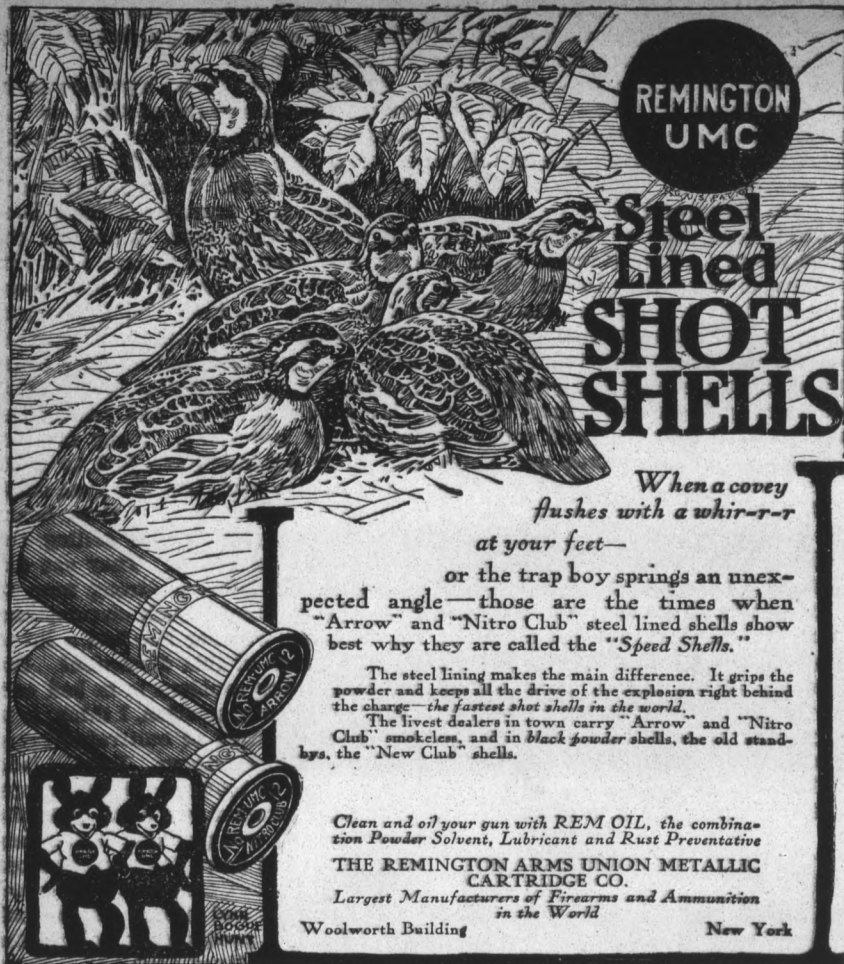
A farmer's investment in farm machinery is no small amount on the average farm and in order to keep it in the best working order and in shape

the life of the machinery and the efficiency with which it will do its work will soon pay for it.

Nebraska. PAUL H. EATON.

LILLIE FARMSTEAD NOTES.

This is the first year in the history of my farming when we had to make radical changes in the crop plans for the season. I don't remember of a year when we failed to put in the crops planned, with only some little modification, but this year we have given up our 40 acres of Dwarf Lima bean proposition altogether. It got so late it was very risky, but besides we never could have cultivated them. We cannot half cultivate the corn now. It needs it badly but the wheat and oats must be saved. Better to care for a crop already grown than to neglect it and try to grow another. I don't mean that it is not advisable to sometimes let the hay and wheat stand for a day or two and cultivate beans or corn, even though these crops are ripe. But in our case we have timothy hay that is not yet cut, July 29. Wheat is not drawn, oats are ripening fast, and we are a little short of help. If this extreme hot weather continues this hay must be cut at once or it is of no value. Now, had we planted the beans we could not have cared for them, hence we have abandoned the idea and



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It's the genuine Chatham Mill and a cracker jack 1 1/2 H. P. general utility Gas Engine connected and ready to run—each sold at an unbeatably low price.

Free trial? Yes, indeed! Not a penny till it makes good! Liberal credit, too—not a cent of cash required.

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Clean and grade your fall Wheat Seed and your Market Grain! And your grass seed! And next spring your seed corn, oats, etc. We are specialists on cleaning any Grain or Grass seed in America.

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Pedregood Seed Wheat, Red Rock and Shepherds' Perfection. \$2 per bu. Sacks free. Hutzenga & Shoemaker, R. 2, Hudsonville, Mich.

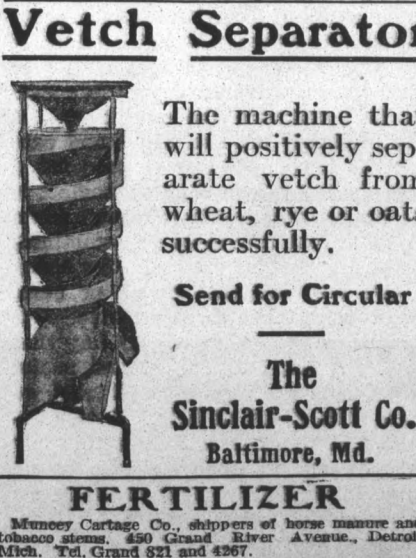
WE WANT VETCH. SEND US SAMPLES.

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What Is Rock Phosphate Worth?

When at the Ohio Agricultural College 40 pounds, costing about 15c, added to a ton of manure gave increased crop yields worth 75c. This was the result of an eighteen-year test, and is one of the many that prove the claim, "Rock Phosphate is the most economical and only permanent source of Phosphate." Get literature from us today on Rock Phosphate. Mention this weekly and we will send you free a copy of "The Farm That Won't Wear Out."

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Field Selection of Seed Beans

By JOSEPH F. COX

As ye sow, so shall ye reap." The observations of countless seasons of experience are summed up in this ancient truth. The seed is the primary factor in determining the character of the crop.

Success with the bean crop, even more perhaps than with other crops, depends on the seed planted. As in the case of other crops, the seed should be of a high yielding variety, well adapted, and of good germination. The bean crop, however, is peculiar in that it is affected by two particularly damaging diseases—the blight and the anthracnose—both to a very large extent carried by the seed planted. These diseases have become a serious menace to bean growing in Michigan. The anthracnose, which causes a rusty spot to appear on the pod as well as on the bean seed, can be controlled by planting clean seed. The blight which also discolors the seed and increases the amount of immature beans can be very largely controlled by planting clean seed, and it is very probable that planting disease-resisting strains will help in its control.

Clean Plants Produce Clean Seed.

It is a current saying among Michigan bean growers that "clean seed will yield clean beans," but to secure disease-free seed is becoming more and more difficult. Clean seed can best be secured by selecting beans for seed purposes only from fields which are free of disease, or by carefully selecting individual plants which do not show disease spots, and reserving them for seed purposes. Field selection is the most practical means advocated for the securing of clean beans for seed purposes and for the control of bean diseases.

Varietal Improvement Through Field Selection.

To the casual observer the plants of the average bean field appear very much alike, but the careful observer will notice that no two are similar. There are variations in the number of pods borne, character of growth, maturity, etc. By selecting for seed purposes those plants which are superior, which ripen properly, yield the most and which tend to resist disease, the yield, maturity and vitality of the bean plant can all be markedly influenced. That "like begets like" is one of the established truths of farm practice, and the wise selection of proper plants for seed purposes cannot help but result in the improvement of the bean crop.

How to Field Select.

The plants best adapted for seed production are those which are as free as possible from disease, properly ripened, heavily podded, carrying pods well off the ground, and with seed of uniform type. Diseased, late maturing, or viney plants should be avoided.

In making the selection a practical method is to enter the field at time of maturity, and pull for seed purposes, clean, heavily podded, erect, early maturing plants growing under average field conditions. Occasional diseased pods on selected plants should be removed. These plants should be handled apart from the general crop and threshed separately by flailing upon a clean floor, or by beating out the seed in clean sacks. The seed should be property stored in sacks or bins which have not contained "field run" beans.

Another method which some consider more easily performed, but which is not so effective, is to mark off an area in the general field where growth is best. The selected section should be large enough to furnish ample beans for seed. When cultivating this area, remove all diseased, small, or otherwise undesirable plants. At harvest time pull all plants which are objectionable, leaving only the most desirable. The remaining plants which meet the requirement above mentioned are harvested, carefully inspected for dis-

eased pods, threshed, and stored separately for next season's seed.

The progress made in the improvement of the bean crop by the methods outlined will depend largely upon the judgment used in selection. Many factors must be considered in field selecting, and no particular characteristic should be developed at the expense of others. For instance, if too much attention is given in selection to the securing of high-yielding plants without considering also the maturity factor, the growing season may be so lengthened as to bring about loss through improper ripening or frost damage. High-yielding plants tend to ripen late, and on the other hand, very early maturing plants do not as a rule yield heavily. Both yield and early maturity are desirable factors to be sought for in selecting. Where such a conflict occurs a wise compromise must be made and the highest yielding, properly maturing plants secured.

The field selection of beans for seed purposes, if rightly carried out, enables the bean grower to secure reasonably clean seed from high-yielding strains. The widespread planting of such seed will result in rapidly increasing the yield and improving the quality of Michigan's bean crop.

THE USE OF THE LAND ROLLER.

The land roller is a very important implement for some soils but there is probably no tool that will do so much damage when wrongly used. It seems to be quite generally believed by farmers that the water content of the soil is increased by rolling. Compacting the soil destroys the many large openings, presses the soil grains closer together, and so increases the water lifting power of the soil by increasing its capillary action. This raises the moisture from the lower to the upper layers of soil. It has been found by experiment that within twenty-four hours after rolling, the upper one to two feet of ground will contain an increased amount of moisture while the lower two to four feet has become drier. This makes the soil appear to be more moist although the total amount of water in it is the same. As the water is now nearer the surface, the rate of evaporation is greatly increased so that the whole ground soon comes to contain less water than before rolling. As the wind velocity close to the surface of rolled ground is from 65 per cent to 75 per cent greater than on unrolled ground, this aids in evaporation as well as causing the lighter soils to blow and drift in the wind.

In this vicinity it is the practice of some farmers to immediately follow the plow with the roller and then not work the ground again until just before planting. This leaves the soil in ideal condition to lose its moisture and to blow. We have had many windy days, both last spring and this and on every such day the rolled fields can be readily located by the clouds of dust while the unrolled fields show little or no drifting. A light harrow should follow immediately behind the roller to form a dust mulch to prevent evaporation and to roughen the surface to prevent blowing.

Considering the effect in soil moisture of rolling, it would seem that in general it is good practice on seeding and the small grain crops but that it is best not to roll the ground for a deep rooting crop if there is already moisture enough in the upper layer of the soil to start germination. Sometimes after the sowing of spring grain the heavy rains cause a crust to form that greatly diminishes the porosity of the soil. This crust can be broken up by the roller when the ground is dry and a partial mulch formed that will do much toward retaining the soil moisture.

Allegan Co.

O. F. EVANS.

Variations In Milk and Cream Tests

(Continued from last week.)

And these changes in the speed at which the machine is turned occur much more often than we think. Frequently we hear it said: "I can tell in a minute just by the sound, when my machine is being turned at the right speed." The man does not intend to deceive us, he thinks he can tell, but in nearly every case he can not. The speed at which most people turn a separator depends upon how they feel at the time. When they are not weary, but are at their best, it is easy to turn it up to speed, or even too fast, but if they have gotten up some morning, not a bit well, feeling that to milk cows and separate milk is "A terrible task," they will naturally turn the machine slower. Then the cream will be thinner, and they may wonder why. The writer has taught music for years. He has beaten time for choruses until he used to think he could turn a separator exactly alike at all times. But he can not do it, and he has yet to find the fellow who can, without the help of some contrivance that is not influenced by the changes incident to human nature.

A Device to Determine Separator Speed.

Everyone who operates a cream separator should have some way of knowing when he is turning it at the proper speed. The most simple device and the one we have used for years, is a small weight suspended from the ceiling of the room by a cord of just the right length to cause the weight to swing the required number of times in a minute.

In this way we can tell at all times just how fast we are turning the machine and if we turn it according to the indication of this weight, there will be no change in the test of our cream except as the content of butter-fat in the milk changes, providing it is properly sampled and tested at creamery.

But we are glad to admit that now and then mistakes are made by those who buy and test cream. We are glad to admit it because it is the truth, and we should always be glad to admit the truth, even though it may not be pleasant truth.

It is not strange that these mistakes should occur. In testing a large number of samples it is possible to make mistakes in writing down the several results. Errors may occur in other ways, but it is probable that by far the larger number of mistakes come not from inaccurate testing, but from bad sampling of the cream.

It is more of an art to correctly sample a can of cream than we might think at first. If the cream has not been properly cared for before delivery it may not be easy to get a good sample of it, and if it is not well stirred at the time the sample is taken, we will not get a good sample, no matter how well the cream may have been cared for previously.

For the management of a creamery or a receiving station where cream is bought and delivered, to allow an inexperienced man to take in the cream and sample it, is just as bad as to allow an incompetent person to test it, and either practice portends trouble for the creamery or the receiving station.

I presume that now and then a dishonest man is receiving cream, and purposely testing it incorrectly for his own imaginary profit, but I believe these cases are not as numerous as some suppose. The man who would purposely return a fraudulent test of cream, would commit a theft if we did not watch him. The writer refuses to believe that the majority of men will take what belongs to someone else without consent, and he believes that the average buttermaker who tests cream in Michigan creameries is as honest as men in general.

We have tried in this article to point out some of the causes that may produce changes in the tests of milk and

cream, because we feel that very often buttermakers are blamed when they are not in the least to blame, and people are accused again and again of dishonesty when they are honestly doing the very best they can, and that this is done by producers of milk and cream not with the intention of harming the reputation of anyone, but simply because the reasons for the things of which they complain are so little understood.

Oceana Co.

W. F. TAYLOR.

TEMPERATURE IN THE SILO.

Everyone who has used a silo has observed that at times the silage becomes hot. This is generally noticed on the surface during mild weather as when the silage is being fed in rather small quantities. Many have supposed that the entire mass of silage becomes very hot and that a certain amount of heat is necessary to preserve it. The agents of various types of silos have also taken advantage of the lack of general information on this subject to make claims for or against certain types of silo on the ground that the temperature of the silage is influenced by the particular construction.

The Missouri Experiment Station decided two years ago to get the facts. Electric thermometers were placed in silos to take the temperatures. A bulb was placed in the silo during filling at any point where it was desirable to take the temperature. This bulk had wires leading to the outside of the silo so that the temperature could be taken with an electrical device at any time. Temperature readings were taken near the center of the silage mass and at the wall at frequent intervals during two seasons in from eight to ten silos including stave, iron, tile, Gurler and concrete.

It was found that the temperature in the depth of the silage is never high, as is so often thought. After filling, the temperature rises from five to ten degrees the first few days and then slowly declines during the fall and winter until it reaches the lowest point, about 40 degrees, in March. In good silage the temperature seldom goes more than a few degrees, if any, above 100 degrees F., and may not go above 90. The only high temperatures found are at the surface when the air comes in contact with silage. Furthermore a temperature much above 100 means loss of silage as some of the material is being actually burned to make the heat. Mould will raise the temperature some. Corn put in the silo in a mature condition develops more heat than that put in green. No relation was found between the material used in the construction of the silo and the temperature of the silage. Practically no difference in the freezing of the silage on the wall was observed with the different kinds of silos.

KEEP COWS WELL FED.

During the hot weather of July and August the milk flow of the average herd drops down nearly half. The heat and the condition of the pastures common at that time of the year are the main causes of this drop. The flies generally blamed are of much less importance than other conditions. The real cause is the failure of the animals to eat sufficient feed. Poor pastures, heat, and flies may all contribute to this result. It will be observed that during the hot weather the cows will graze but little and come to the barn at night evidently hungry. To produce three gallons of milk a day a cow has to gather at least 100 or 125 pounds of grass. If the pastures are short and the weather hot, generally this much grass will not be gathered and soon the milk flow goes down.

The influence of these summer conditions cannot be removed but may be improved. The main thing is to see

that the cows do not lack food. They should be in the pasture at night and during the earliest, coolest part of the day. If the pasture is short feed silage or green crops. It is well known to all experienced with dairy cattle that when the milk flow goes down once for lack of feed it is impossible to bring it back to where it was before by better feeding later. To get a high production of milk during the year the cow must be kept at a high level of production all the time. For this reason do not neglect the cows during the hot weather and expect them to come back strong again when conditions become better in the fall. Keep them going all the time.

DAIRY PROBLEMS.

The Butter Won't Come.

We have the same cows we have had, and they have salt often, and all appear to be healthy, but my wife has to churn from three and a half to four hours during hot weather and even then butter comes soft.

Isabella Co.

T. A. S.

Although I do not know, I am of the opinion that the fault is not with the cows, but probably is the fault of the temperature of the cream at time of churning, also perhaps the method of handling the cream before churning.

If you skim with a separator cool the cream before mixing it with previous churnings. Save the cream and keep in a cool place until you have sufficient for a churning. Then warm the cream to 70 degrees and allow it to stand at that temperature for 12 hours, or until it ripens. Then cool to 60 degrees and churn. While ripening the cream and getting the temperature, stir the cream occasionally so the temperature will be uniform. After doing this if your butter does not come, write us again.

Building a Bull Pen.

I am contemplating building a bull pen this fall and would like to have you answer a few questions regarding the building of bull pens. How high should the pen be? Would you advise having the south side open? How thick a wall would be necessary, of stone, of concrete? How large would you advise me to build the yard? And what is the most satisfactory way of ventilation? Any other information on the building of a pen would be appreciated.

Charlevoix Co.

E. N.

Our bull pen is 16 ft. square. It is large enough, but none too large. We have a strong manger across one side and two strong stanchions. Sometimes we have two bulls and allow them the run together. A bull is always more quiet if he has company. Eight feet to the ceiling is high enough. A light stone wall or an eight-inch concrete wall is of sufficient strength. I would prefer one made of lumber. A stall made of lumber, double-boarded, is as warm, and not so damp as stone or concrete. I would not have the whole side open. It is too much exposed in bad weather. An open doorway is better. It is advisable to have a stanchion, then if you wish to lock him up you can.

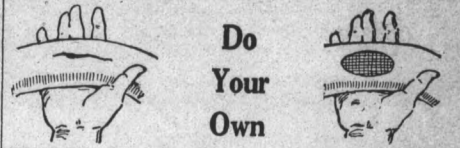
The larger the yard the better. If you can have a small pasture leading up to the pen, this is ideal. A yard four rods square will do very well. This will give a chance for exercise.

COLON C. LILLIE.

GRAIN FOR THE SKIM MILK CALF.

Calves are usually fed whole milk for two to three weeks, then gradually changed to skim-milk. About the time of changing, begin to feed a little grain but do not think that it is necessary to use oil meal or any other high-priced feed, high in protein, or fat, or both. Experience shows that a mixture of two parts of corn and one part of oats, by weight, gives as good results as oil meal and ready-mixed calf meals often purchased at much higher prices. Bran is not especially good for the young calf because it is too laxative. The grain mixture should be fed immediately after the milk and neither should be fed too liberally or scours may result.

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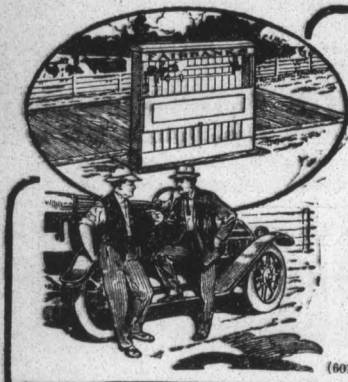
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Pasturing Corn

In 1914 I rented my farm and among other things hired my tenant to put out and tend 30 acres of corn. I paid him for labor on this 30 acres of corn as follows:

Plowing the ground.....	\$ 60.00
Rolling, two days at \$3.50.....	7.00
Dragging twice over with spring harrow.....	21.00
Rolling two days.....	7.00
Planting three days.....	10.50
Seed corn.....	5.00
Picking stone, 2 days.....	7.00
Dragging two days with spike-tooth.....	7.00
Cultivating first time, six days.....	21.00
Cultivating second time, five days.....	17.50
Cultivating third time, five days.....	17.50
Cultivating four time, four days.....	14.00
Cultivating fifth time, four days.....	14.00
Total expense of labor.....	\$208.50

I estimated the crop at 1,200 bushels standing on the hill.

When this corn was nearly matured and well dented I turned in about 100 lambs, and a few days later I bought and turned in 100 hogs and pigs. The lambs were in the field about a month. Most of the hogs were kept in the field until January, when the corn was all consumed. I sold the hogs the fore part of January and the lambs were sold earlier. There was no manure hauled on this field.

After paying for the labor, putting out the corn and paying for the lambs and hogs, I had a little over \$14 per acre for the use of the land and time spent in looking after the stock. This left the manure made out of the corn well scattered over the ground and at no expense for hauling.

We followed this corn crop with oats and seeded to clover. Had a big crop of oats and a good stand of clover. I cut one crop of clover hay off these fields and then a crop of clover seed. Then planted to corn, followed by oats and seeded with clover again.

Hillsdale Co. J. A. PALMER.

FEED PIGS ON FORAGE CROPS.

"Spring pigs fed on good forage crops make five times as much profit as those fed in dry lots," says Animal Husbandman Gatewood at the Kansas State Agricultural College. "The cost of 100 pounds of gain on young pigs with corn at 50 cents a bushel and such forage crops as alfalfa, rape and clover, runs from \$2.88 to \$3.96, with older hogs from \$4.23 to \$5.31.

"The accredited gain in pork to an area of forage varies, depending upon the crop, the age of the hog, and the amount of grain fed. An acre of sweet clover with corn at 50 cents and hogs at \$5 a hundred netted \$42.07; rape, \$37.50; alfalfa, \$65.90; and a combination of oats, peas and rape, \$64.60.

"Of all forage crops, alfalfa is the great permanent crop, while rape is the emergency crop, and green rye the fall and early spring crop. The ideal forage crop should show adaptability to soil and climate, permanency, palatability, reasonable cost of planting, and good pasture at any time during the growing season. Alfalfa, clover and rape have most of these qualities."

TAKE CARE OF YOUR COLTS.

Horse and mule colts suffer more from heat and flies during July and August of their first year than at any other time, according to the experience of the Missouri Agricultural Experiment Station. During these two months many plump, well-developed, smooth-haired youngsters become thin and pot-bellied, listless and begin to show staring coats. In this condition they are likely to be weaned in September and perhaps before they have become thrifty again they are put on a scant supply of dry winter feed. Such set-backs cut profits seriously.

Colts from work mares should be kept in the barn or lots while their mothers are in the field and should not

be turned in with their mothers if the mares are warm immediately on their return from the field at noon or in the evening. They should be kept separate until the mothers are thoroughly cooled.

The colts should be eating grain and a little grass or hay by the first of July and if they have not yet learned to eat grain, a clean mixture of equal parts of crushed oats, ground corn, and bran should be placed in a trough where they can get it at any time. The lots should have plenty of shade and if the colts are kept in the stable, the stalls should be partially darkened, taking care not to shut out the breezes or free circulation of air. If flies cause much trouble hang up burlap bags where the colts can walk under them and scrape the flies off their backs and sides. Proper care may make a difference of from \$10 to \$40 in the value of the colt at weaning time and these inexpensive methods should be used to increase the owner's profits as well as to make the colt do better.

Missouri. E. A. TROWBRIDGE.

SWINE FEEDING EXPERIMENTS.

The Department of Agriculture has received a report from the Wyoming Station of a test in swine feeding. Three lots of seven pigs each were fed 112 days a grain mixture of middlings and corn meal, 1:2, lot one in addition being hurdled on pea pasture, lot two on pea pasture but not hurdled, and lot three in the dry lot. These lots made average daily gains per head of 0.97, 0.8, and 0.79 pounds, requiring 2.5, 3.0 and 6.15 pounds of grain per pound of gain for the respective lots. It is estimated that one acre of hurdled pasture saved 1,897 pounds of grain, while one acre of the pasture not hurdled saved 1,340 pounds.

At the close of the experiment all three lots were fed 56 days in the dry lot, and made average daily gains per head of 1.37, 1.28, and 1.04 pounds, requiring 4.94, 4.79, and 5.46 pounds of grain per pound of gain for the respective lots. The better showing made by the first two lots is credited to the residual effect of the pasture, being for lot one, 278 pounds, and for lot two, 335 pounds, so that the total amounts to be credited to the pasture are 2,086 and 1,568 pounds of grain saved by one acre of pasture. In this experiment 10 cross-bred and 11 pure-bred pigs were used, and both while on pasture and on dry feed, the gains made by the two classes were practically the same.

WHEAT MIDDINGS THE BETTER FEED.

The guaranteed analysis of a certain feed shows crude protein 8 per cent; corn fibre 5 per cent; nitrogen free extract 70 per cent; ether extract 1 per cent. I am not well enough posted to fully understand the analysis, but it looks to me as if part of it is misleading. With the above feed at \$1.20 per cwt. and white middlings, 15 per cent protein, at \$1.65 per cwt, which would be the cheapest and best for pigs?

Oceana Co. J. F.

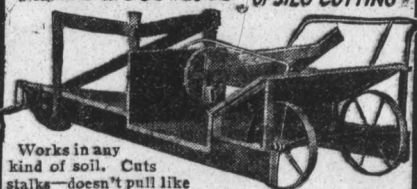
If the feeding stuff contains eight per cent protein, 70 per cent carbohydrates and one per cent fat it has a much wider nutritive ratio than wheat middlings. It would be all right for fattening hogs, but hardly rich enough in protein for young, growing pigs. This feed has about the same proportion of food nutrients as barley, or corn, both of which are too rich in carbohydrates for young, growing pigs.

Of course, the price is cheaper than middlings and a ration could be made that would be suitable for young pigs by using a little animal tankage with it, or a little oil meal would do. Again, if you have skim-milk this food made into a slop with skim-milk would make a most excellent food for young pigs, but fed alone it doesn't contain enough protein in proportion to the carbohydrates.

COLON C. LILLIE.

The PERFECT CORN HARVESTER

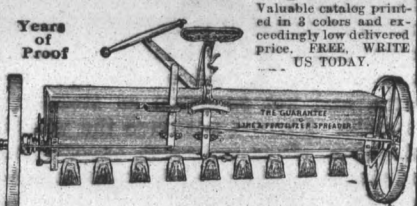
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Works in any kind of soil. Cuts stalks—doesn't pull like other cutters. Absolutely no danger Cuts Four to Seven Acres a Day with one man and one horse. Here is what one farmer says: "I would not want to be without it for twice what it cost me. Some of our corn was very weedy, but the harvester did the work. Respectfully, Herman Fritz"

SOLD DIRECT TO THE FARMER Send for booklet and circulars telling all about this labor-saving machine; also containing testimonials of many users. Send for this circular matter today. **LOVE MANUFACTURING COMPANY** Dept. 36 Lincoln, Illinois

The Guarantee Spreader



For years the GUARANTEE LINE AND FERTILIZER SPREADER WITH ITS seven superior patented features has thoroughly and convincingly demonstrated its superiority over practically every other spreader on the market. The question of spreader superiority has been settled. Get the actual facts. Ask the man who owns a GUARANTEE LINE AND FERTILIZER SPREADER. While others are claiming quality, we are GUARANTEEING IT. Write us today for full information and exceedingly low price. Comes fully equipped with all accessories and FREIGHT PREPAID.

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THE HINGE DOOR SILO

THE most convenient and best equipped silo made. Doors always in place. Strong steel frame. Perfect anchorage. Best material throughout. We also make the Lansing Silo, the Chicken Silo, and Tanks of all kinds.

WOODS BROS. SILO & MFG. CO. Main Office: Dept. 15 Lincoln, Neb. Factories: Lincoln, Neb.; Lansing, Mich.; and East St. Louis, Ill.

Professional Ridgling Castrator

DR. JOS. J. DONAHOE Address Mount Clemens, Michigan Charges Reasonable

LIME

Palverized lime rock for "sour" soils. Write for LOW PRICES DIRECT TO YOU and we will send sample and full particulars. Write to office nearest you. **LAKE SHORE STONE COMPANY.** Muskegon, Mich., and Benton Harbor, Mich.

Selecting Fair Fruit

THE time for the annual agricultural fairs is near at hand and many progressive farmers and fruit growers who take a natural pride in their products are planning to exhibit their choicest products at the fairs.

Fruit growers take almost as much pride in their choice specimens of apples, pears or peaches as do farmers their choice animals, and it is certain that no exhibit is more attractive than a good show of fruit. It appeals to the appetite as well as to the eye and affords a good means of increasing fruit consumption as, especially in the larger fairs, many city people see the exhibit and their desire for fruit is increased thereby. Many exhibitors often get direct orders for fruit as the result of their exhibits.

The Essentials of a Good Exhibit.

While many fruit growers are ambitious to exhibit, they fail in making a good show and winning a prize and thus become discouraged for exhibiting again, because they do not have in mind the essentials of a good exhibit. The most important thing in a good exhibit is to have fruit without a blemish. Fruit with blemishes, especially as a result of insects or disease, is given little consideration by the judges as it shows carelessness on the part of the grower. It is therefore useless to take any fruit, no matter how large or how well colored, that shows any sign of insect or disease injury.

Uniformity of the exhibit is probably the next greatest essential in making an attractive and prize-winning display. This includes evenness in color, size and shape. It is far better to have medium-sized specimens that are all about the same size, color and shape, than to have several large handsome specimens, no matter how attractive, and then fill in with several good medium-sized ones.

Judged on Basis of Market Value.

The general conditions which prevail in getting up a good exhibit of fruit are the same as packing a good package of fruit for the market. The properly packed market package which brings the highest prices has uniformity of size, color and shape as well as freedom from blemishes. In packing for the market it should be so done that the purchaser will find the fruit throughout the package the same as that on top. In examining packages of fruit on exhibit the judge looks for the same thing and judges according to the conditions he finds. In fact many judges have in mind the market value of the fruit they judge when making a decision. The judge often asks himself, "Which would I give the most for?"

Exhibitors often lose prizes by not having the proper number of specimens on the plates. For apples, pears, peaches, grapes and quinces the number per plate should be five, and for plums and crabapples the number should be twelve. In making a plate of grapes use five of the largest and most compact bunches that can be found. Apples should be placed with stems up and pears should be placed on their side. Where five specimens are necessary four should rest on the plate and the fifth on top of the four.

Prepare Exhibit Early.

To facilitate the work of preparing the exhibit in general, fruit growers should get their fruit to the fair early and get it in shape as early as possible. Latecomers make a lot of extra work for those who are busy arranging the exhibit and as a result the exhibit hall is in confusion and disorder during the early part of the fair.

CULTIVATING THE GARDEN.

When the field work on the farm demands the entire attention during the summer the vegetable garden for home use may perish while struggling for sunlight as it sinks deeper into the

mass of weeds. Hoeing with a hand hoe takes a lot of time and the work of keeping up the kitchen garden may have to be done in the evening after the field work is over. A wheel hoe will prove practical in keeping the garden free from weeds and it is surprising how much territory can be covered with these hoes in a short time. If they are pushed steadily through the soil it requires much hard work but this is greatly reduced if the worker adopts a sort of swinging motion in pushing through the soil. By constantly drawing back the arms and shoving forward, a great deal of force is gained and it is easier to rip out the weeds. A steady push will be very difficult unless the soil is mellow from frequent working.

The ease with which a wheel hoe can be used depends on promptly working the soil after every rain or at least at frequent intervals. Many of the tools of this kind are equipped with several attachments useful in various kinds of garden work and they will be a good investment in keeping up the vegetable garden, even on farms where plenty of horses are available. A strong boy can often use a tool of this kind to advantage when the teams are all busy in the field. At least they beat hand-hoeing with its steady pounding at the weeds, and can be purchased for sums as low as three or four dollars.

Ingham Co.

R. G. KIRBY.

TROUBLE DEPARTMENT.

Cherry Leaf Blight.

The leaves on our cherry trees are turning yellow and falling off. I have noticed for some years they do that at this time and leave the trees without leaves for the rest of the season, which impairs the vitality of the trees and in a few years they die. Can you tell me what is the cause of that and how to prevent it?

Muskegon Co.

A. N. D.

Your cherry trees have what is called the cherry leaf blight. This is a fungous disease which can be quite successfully controlled by spraying with some good fungicide. Either lime-sulphur at the strength of one gallon of the concentrated mixture to 50 of water, or Bordeaux mixture made of four pounds of copper sulphate and five pounds of lime will give good results.

The usual method of control is to spray just before the blossoming period and again shortly after the blossom petals have dropped. Occasionally the disease is serious enough to necessitate another application of the fungicide after the fruit has been harvested.

There is little that you can do this year to control the trouble, as the disease has probably gained such headway that spraying would have little or no effect. If there are quite a few of the leaves which are still a healthy green, you might prevent the spread of the disease to them if you sprayed immediately.

WITH MICHIGAN FRUIT GROWERS.

Mason county growers met at Ludington with a view to arriving at some standards in the grading and packing of fruit. Men from outside who were present included Prof. Carmody of the Horticultural Department, M. A. C., Prof. Whalen of the Entomological Department, and R. H. Ellsworth, of the State Market Commission. Mr. Ellsworth offered a resolution which was adopted recommending that the grades and brands for peaches for the current season be as follows: "Extra Fancy—peach without a blemish, sound, ripe, of good color for variety, and not less than two and one-quarter inches in diameter. Fancy—A peach without a blemish, sound, ripe, of good color for variety, and not less than two inches in diameter. Choice—A peach without blemish, sound, ripe, of good color for variety, and not less than one and three-quarters inches in diameter."

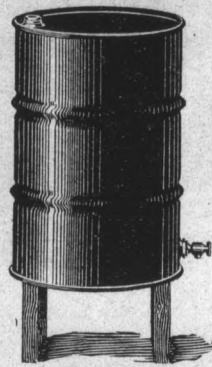
Kent Co.

ALMOND GRIFFEN.

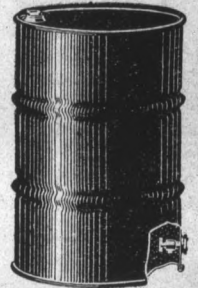
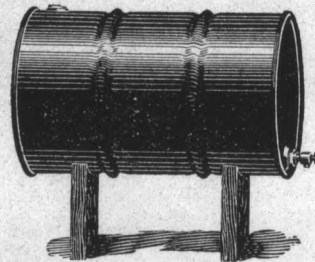
STEEL BARRELS

FOR

Storing Automobile, Lubricating, Gas Engine Oils, Gasoline and Kerosene



Drum may be used in either position when used as Storage Barrel



Position of faucet when barrel is sent to filling Station.

Reversible Faucet furnished with each BARREL—shipped inside as bung, in one opening. To use, unscrew, reverse faucet, and screw in again in either opening.

By the use of Steel Storage BARRELS, gasoline, kerosene and lubricating oils may be purchased in larger quantities, at cheaper prices. Always a supply on hand at your own garage. The safest way to keep inflammable liquids. No waste from evaporation or leakage. Contents drawn off in a convenient manner, without chance of spilling. The cheapest efficient and safest method of storing oils, gasoline and kerosene. No leaks; no evaporation; no waste; no pumps to wear out.—Safety First. These BARRELS are guaranteed to be manufactured with the best of material and workmanship; and will last a life time if fairly treated. These are not light flimsy packages such as may be secured at a cheap price; but rather, heavy gauge substantial barrels well worth the additional price. We leave it to you—does it pay to buy cheap stuff?

15 Gallon BARREL, with Faucet, -	\$3.00	} All prices at Detroit, Mich.
30 Gallon BARREL, with Faucet, -	\$4.00	
55 Gallon BARREL, with Faucet, -	\$5.00	

Send postal, or express money order, with order for BARRELS. (Currency at senders risk.) Mail All Orders To:—

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Save Half the time, labor and power in disking

Use a double-action harrow—disk twice at one going over. Save gasoline and keep from compacting the soil by a second working. But be sure the harrow has our rigid main frame that forces the rear disks to cut midway of the fore disks—the only harrow where rear disks cut as deep and do as much work as the fore disks, leaving the land level. Use a

Cutaway
(CLARK)

**Double - Action
Engine Harrow**

Its forged sharp disks cut deep without bringing up trash; the dust-proof, oil-soaked, hardwood bearings and perfect balance make draft light; it has an adjustable hitch, and is made in sizes to fit all tractors, with spreader hitch for use in multiples. If your dealer has not the genuine CUTAWAY, write to us direct. Be sure to write us for our new free book, "The Soil and Its Tillage." Make the best of your power this year.



The Cutaway Harrow Co.

Maker of the original CLARK disk harrows and plows

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More Potato Dollars

With the
LITTLE GIANT DIGGER

FINEST steel construction, well balanced, light draft—two horses pull it easily. Strong enough for four in heavy soil. Built in the O-R-C-Way for long, hard service. We claim it's the best buy on the market. You'll say so, too, when you see it. Read the description in the lower right hand corner. Then we want you to see one at your dealer's—no obligation to buy just because you look.

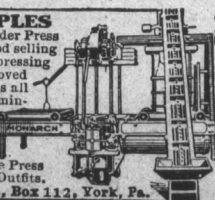


Equipped with vine separator, which deposits trash and vine at side of row. Elevator is 7 feet long and 22 inches wide—designed to accommodate the heaviest rows. Hillside lugs and stone shovels furnished when desired. Write for FREE CIRCULAR of "FARM MACHINERY OF MERIT" and detailed description of THE LITTLE GIANT—THE PERFECT DIGGER.

The Ohio Rake Co., 1500 Albany St., Dayton, O.

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With a Monarch Hydraulic Cider Press you can turn your culls into good selling cider. You can also do custom pressing for your neighbors. Our improved high pressure construction gets all the juice from the apples with minimum power. All sizes of Presses, from 15 to 400 barrels a day. A small investment will start you in a profitable business. Ask for free 60-page Press Catalogue describing the 1916 Outfits. A. B. FARQUHAR CO., Ltd., Box 112, York, Pa.



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Guaranteed non-irrigated for \$9.00 bu. and up. Best seed—99 1-2% pure. We save you money on Alfalfa, Clover, Timothy, Sweet Clover and all grass seeds. Write for prices, free samples, and big Profit Sharing Seed Guide.

AMERICAN MUTUAL SEED COMPANY

Dept. 409 43d and Robey St. Chicago, Illinois

When Writing to Advertisers Please Mention The Michigan Farmer.

Short Term Notes

It has not been for very many years that short-term notes have received the serious attention from individual investors, but of late the business has grown to such a point that this means of financing the temporary needs of borrowers has grown very popular. Now, the buyers of this type of paper are not only the banks, insurance companies and business houses, but the great mass of individuals who are constantly seeking employment for their funds, are coming to recognize the distinctive merits of a good investment, which will yield them a satisfactory return for a short time.

The essential features of a short-term note or bond, are, (1) quick convertibility; (2) freedom from marked fluctuation in price; (3) average higher yield than long-term bonds of similar class.

As a rule, a short-term note, put out by a railroad company or manufacturing concern, or foreign government, runs from one to five years. Anything longer than that really ceases to come under the note classification, and anything shorter seldom reaches the investor, the banks absorbing this type of paper. In view of the fact that the nearness of the maturity date means proximity to retirement or payment, a ready market is always enjoyed, a market created by those seeking to invest for only a short time for various reasons. Commercial paper, call loans or trade acceptances should not be confused or included in this classification. Future articles will deal in detail with these instruments of credit.

Short-term notes bear a fixed rate of interest, and because the date of payment is near, and because a great variance from par or face value would greatly affect the income yield, the price remains very stable. This feature is very attractive to those making it an investment requirement. These notes are too short to be a party to any great economic, or political upheaval, and any great change in conditions affecting the business financed through a note issue, usually requires a longer period of years than the note holders are concerned with. Every characteristic in the make-up of a short-term note makes for stability and value, causing very little profit or loss to the holder. Of course, there are good and bad, as in bonds, and these statements assume the former condition to obtain.

Because it so happens that short-term notes are issued when long-time bonds are difficult of sale, often in a time of unsettled conditions, and also because the security granted is often inferior to that in a formal bond issue, a higher yield is made possible. Furthermore, the note holder concedes many provisions that a bondholder insists upon. The whole transaction is more or less of a temporary one, and it is not necessary to provide for so many contingencies. The elements of credit, or moral hazard, assume greater importance in granting a short-term credit, an element which is neutralized by the mortgage security in a bond issue.

During the last few years the railroads have been obliged to resort to temporary financing through note issues, due to the unsettled condition of the bond market, and the uncertainty of their earnings. Of late, many industrial concerns have needed accommodation for a short time, and in order to hold their lines at banks unimpaired, have gone into the market for the savings of the people. The European war has brought into prominence the issues of foreign governments, which have borne an attractive interest rate and issued only for a few years. It would manifestly be poor financing to put out a long-time bond, bearing the interest rates which the short issues carry. The policy rather is to refund at a lower rate, after the war is over, credit improved and the savings of

their own people available once more.

The writer strongly recommends that the present opportunity to secure short-time obligations of the foreign governments, at attractive rates, be grasped, in order to afford diversification of investment and share in the prospect for a future profit in an increase in value, or in exchange rights. A good example of an investment of this character is the Anglo-French five per cent bonds, which mature in 1921, carry attractive conversion rights into long-term 4½s, and which can be had at 95½ present price yielding about 6½ per cent. Another loan of this character is available in the American Foreign Securities three year 5's, at 98, yielding 5½ per cent. This is the new French loan, secured by a deposit of government bonds, with a value largely in excess of the total issue. This issue is thoroughly well secured.

J. R. MILLIGAN,
Financial Editor.

A SPECULATIVE INVESTMENT.

I am glad you have started a new department of finance, and if you can give reliable information as to various high-capitalized companies that promise much, and who send their prospectus out in the country, where we cannot look them up, you will confer a favor upon your readers. I enclose one that has recently come in, concerning which I would be glad to be posted.

Calhoun Co. SUBSCRIBER.

The prospectus which you sent me describes a stock, which appears from all the information at my command, to be entirely speculative. In order to attract the small investor, par has been put at \$5.00 per share, and the method of presenting this stock to the investor is one adopted by a great many Broad Street houses. In the arrangement, whereby the preferred stockholder may participate in the earnings of the company, after eight per cent has been paid on the common stock, is attractive, provided the company prospers.

But this offering hardly presents sound investment qualities—the whole line-up is speculative. The company is a new one, having recently acquired their property from another concern. Furthermore, I should say that for the present size of the property, the company is highly over-capitalized. The Greenstreet process, for the recovery of gasoline is still in the experimental stage, and opinion is divided as to its merits.

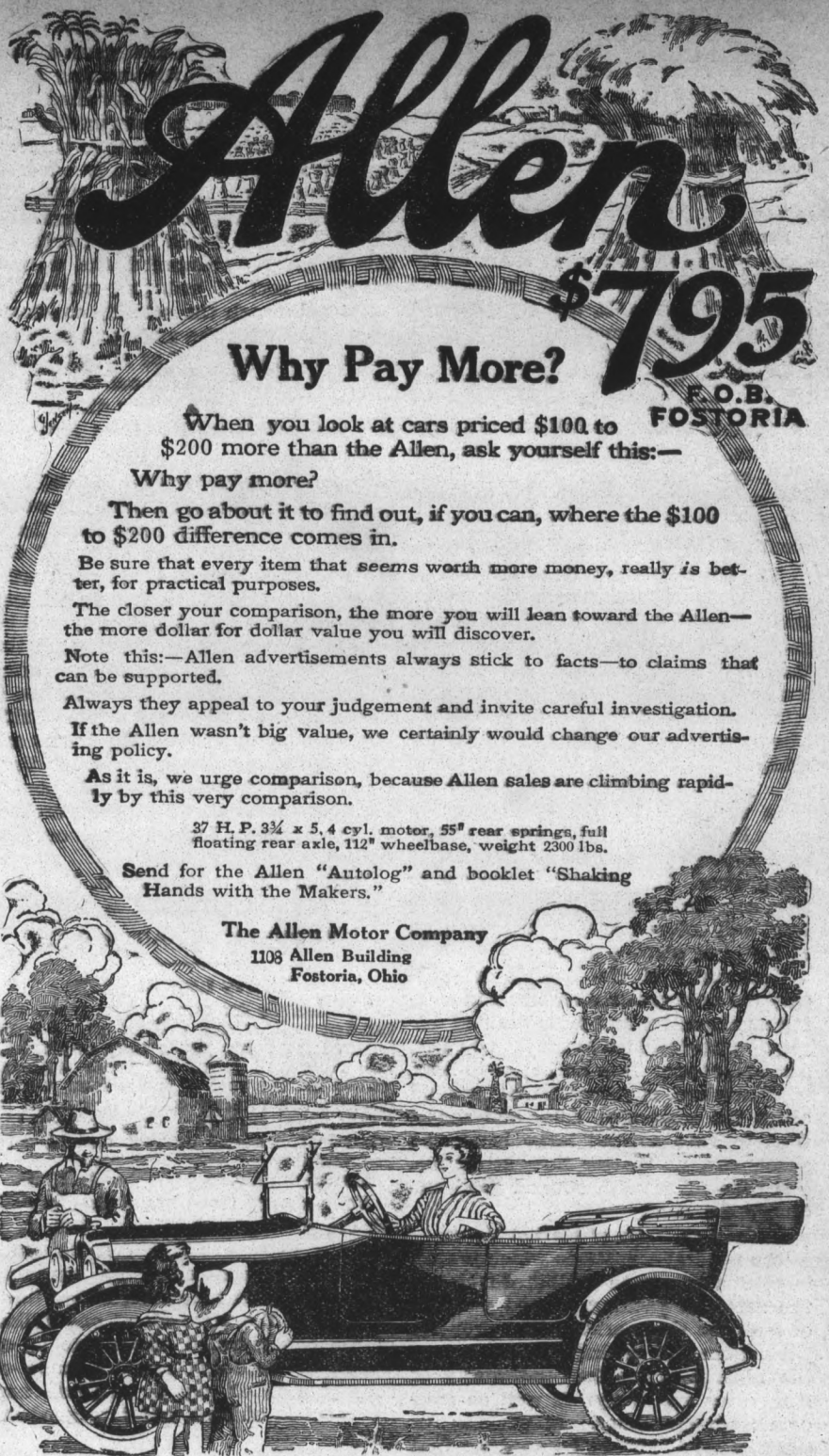
The circular gives no data as to the value of the plants, balance sheet of the company, its condition as to working capital, all of which is important knowledge in making a preferred stock investment. Furthermore, I should want to know just how intimate a connection the directors have with the company, and whether they are financially interested.

It is true extraordinary profits have been made in various branches of the oil business, and the recovery of gasoline at the present time is presenting attractive profits to those companies that are well managed, and where the operating problem has been solved. At the same time, it is well to bear in mind that these profits are the source of investigation by the government and various states and cities, and the present price of gasoline is causing some inquiry. But if it is speculation that you are looking for, the offering submitted to me presents many attractive features, but you should make up your mind to be a good loser if you purchase.

J. R. MILLIGAN,
Financial Editor.

ALWAYS SIGN YOUR NAME.

Frequently inquiries are received from subscribers who neglect to sign their name or give their postoffice address. Such inquiries are not replied to under our rules. To receive prompt attention the enquirer must sign his name and give his postoffice address. The name will not be published if request for this omission is made.



Allen

\$795

Why Pay More?

When you look at cars priced \$100 to \$200 more than the Allen, ask yourself this:—

Why pay more?

Then go about it to find out, if you can, where the \$100 to \$200 difference comes in.

Be sure that every item that seems worth more money, really is better, for practical purposes.

The closer your comparison, the more you will lean toward the Allen—the more dollar for dollar value you will discover.

Note this:—Allen advertisements always stick to facts—to claims that can be supported.

Always they appeal to your judgement and invite careful investigation.

If the Allen wasn't big value, we certainly would change our advertising policy.

As it is, we urge comparison, because Allen sales are climbing rapidly by this very comparison.

37 H.P. 3½ x 5.4 cyl. motor, 55" rear springs, full floating rear axle, 112" wheelbase, weight 2300 lbs.

Send for the Allen "Autolog" and booklet "Shaking Hands with the Makers."

The Allen Motor Company
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Wanted 30,000 Men For Harvest Work on Immense Crops of Western Canada

Wages \$3.00 Per Day and Board
Cheap Railway Rates From Boundary Points
Employment bureaus at Winnipeg, Regina, North Portal, Saskatoon, Ft. Frances, Kings Gate, B. C.; Coutts, Calgary, Alberta.
No Conscription—Absolutely No Military Interference
For all particulars apply to the following Canadian Government Agent.

M. V. Mc INNES
178 Jefferson Ave., Detroit, Mich.

ROSS Silo Fillers

Produce the Best Ensilage Guaranteed for Life of Machine

The Ross is not an ordinary fodder cutter but a special made Silo Filler. Exclusive features including Steel Cutting Apparatus and Steel Blower. The Ross Nos. 18-20-24 are for the Threshermen who make a business of filling silos, also for silo users who want a partnership Silo Filler.

Buy Early and Save Money
If you intend to buy this year, write quick for special proposition. Delay means advance in price.

Our 66th Year

THE E. W. ROSS CO., SPRINGFIELD, OHIO



Wheat Growers

Not getting best results should sow one of the "Hoffman Seed Wheats." Six kinds—reliable, hardy, prolific—varieties that will thrive under trying conditions. Graded—clean of rye, cockle, cheat, garlic, smut. Prices are just. Catalog and samples, both free, if you tell where you saw this offer.

A. H. HOFFMAN, Inc. Landisville, Pa.

TIMOTHY

AT WHOLESALE

Extraordinary big values. New tested re-cleaned seed. Quality guaranteed. Sold subject your approval. Lowest prices on Alsike, Blue Grass, Clover, Alfalfa and mixed grass and all field seeds. Samples, prices and big valuable profit-sharing Seed Guide Free. AMERICAN MUTUAL Seed Co., Dept. 309 43rd and Roby St., Chicago, Ill.

Seed Wheat Read's Vermont. New varieties sown Sept. 20th. average yield 66 bushel to acre. Write for circular. G. A. Read, Charlotte, Vt.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

MICHIGAN FARMER
AND *LIVE STOCK* JOURNAL
PUBLISHED WEEKLY.
ESTABLISHED 1843.

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

This Magazine Section forms a part of our paper every week. Every article is written especially for it, and does not appear elsewhere

As civilization encroaches on the breeding grounds of wild animals the supply of fur steadily diminishes and the price correspondingly advances. If furs as articles of use and adornment are not soon to disappear from general use, methods must be devised for raising fur-bearing animals in confinement. This subject has been investigated by the Biological Survey of the Department of Agriculture, and its specialists are doing everything to assist in starting the new industry.

Success in domesticating wild animals, as in other branches of husbandry, depends on experience, adaptability and prudence. No one should engage in the business unless he enjoys it and is familiar with the habits, characteristics and climatic requirements of the

animals he intends to propagate. The choice of location is of prime importance. The best furs come from cool, moderately humid regions. If a locality furnishes native furs of high grade, that locality is favorable to the domestication of fur-bearers. The ratio of expense to income must be considered with care. One can not pay the exorbitant prices animals for stocking purposes sometimes bring and expect to raise fur at a profit. Neither can one expect to raise furs of a fine quality from inferior stock. But given a normal market for breeding stock and pelts, a favorable location, a love for animals, and an ordinary degree of

Silver Fox Farming

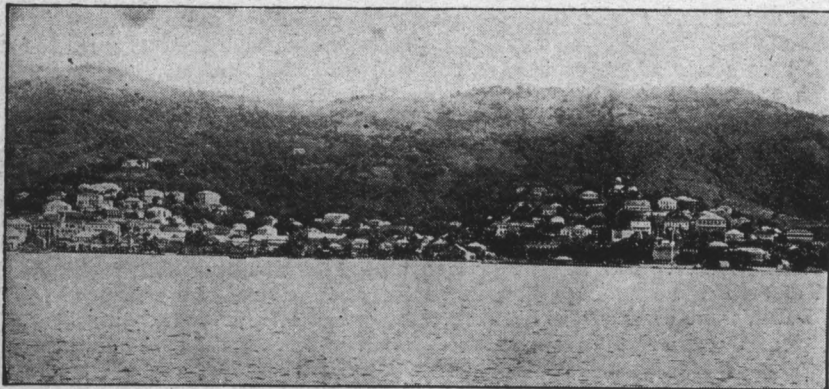
prudence, one may embark in this new sort of farming.

Silver-fox farming is one that offers a tempting field for experiment, for that animal is one of the highest-priced of fur bearers. The business of raising it is believed to promise fair, if not large returns for skill, experience and the investment of moderate capital.

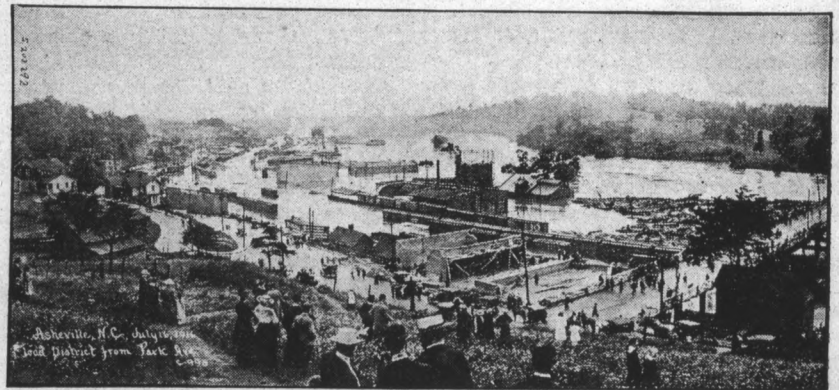
The name "silver fox" as commonly used by furriers, includes the dark phases of the ordinary red fox, variously called silver, silver gray, silver black, or black. It should not be confused with the gray, or tree fox of the United States, the fur of which is of comparatively little value.

Aside from propagation, the domestication of foxes has proved simple. It is true that they rarely become very tame. Even after several generations of parents reared in captivity the offspring retain the wildness characteristic of the species. Nevertheless they are amenable to gentleness. They quickly learn to recognize their keeper and to come to the feeding place when called. Most of them can be induced to take food from the hand, but their tempers are uncertain. If well fed they seldom fight, and when they do, fatalities rarely result. Cold weather has no terrors for foxes, and snow is a delight. At times of alternate freezing and thawing they should not be allowed to lie down on snow as they may thus seriously injure their coats. Unless foxes are diseased or injured

WORLD EVENTS IN PICTURES



View of Danish West Indies which the U. S. May Purchase for \$25,000,000.



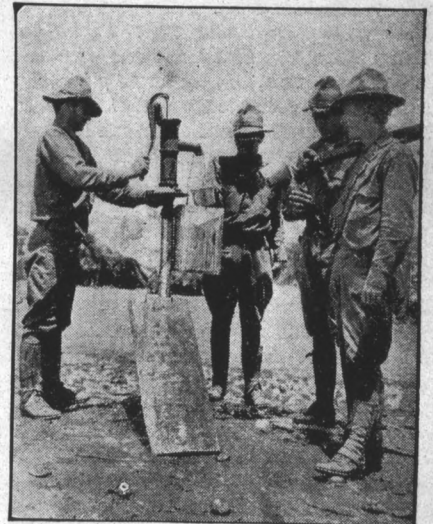
The Flood District of Asheville, N. C., as it Appeared July 16.



A Favorite Pastime for Soldiers off Duty.



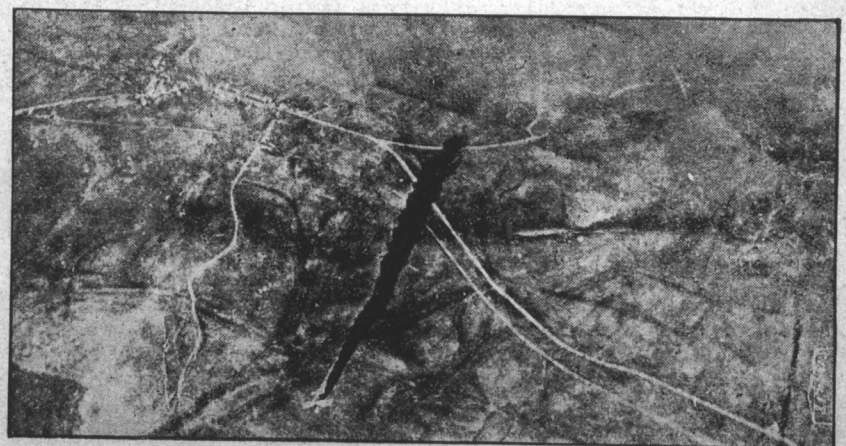
British Battery in the Somme Region Making its Way to the Front.



U. S. Troops in Mexico Obtain Water by Sinking Wells.



School Children of England Encouraged to Invest in Government War Loans. German Fokker Burning in Mid-air, Picture Taken from French Aeroplane.



Copyright by Underwood, & Underwood N. Y.

it is rarely necessary to lay hands on them. When one is to be removed from its yard, ordinarily it can be first driven into its den and thence into a small handling box having a sliding door at one end and strong wire netting covering one side. It can in this manner be transferred without danger of injury to itself or its keeper. Generally speaking, sickness is not common among domesticated foxes that are well cared for. Even more rarely a fox is choked while eating. Passing meat and small or soft bones and cartilage through a bone grinder will not only prevent choking, but allow enough bone to be fed with the meat to produce sturdy animals. A fox sometimes dies from no assignable cause. More often fatalities can be traced to a lack of care or foresight. The dishes from which the animals eat and drink should be washed daily and scalded frequent-

ly. The water should be clean and changed daily. The food should be varied and wholesome.

The cost of yards runs from \$100 to \$150 each, and that of foxes from \$150 to \$250 for common silver foxes up to several thousand dollars for the best silvers. The price of foxes will decline as the supply increases, but the profits from breeding silvers have thus far been very large. So long as the demand for breeding stock exceeds the supply, the value of the annual increase, or the gross income, will average approximately 100 per cent of the value of the breeding stock. When part of the increase can be disposed of only by slaughtering for fur, profits will be less than at present, but even then they are likely to be much greater than from ordinary lines of husbandry involving like capital and attention.

The Cur and the Coyote

By EDWARD PEPLE

(Concluded from last week).

"Say, Chip," remarked Frisco Jim, with befitting solemnity, "thet there dog o' yo'r'n is gittin' jes' too cocky fer to live a minute. He don't need nothin' but a straw hat, 'n' a toothpick shoved in his face, to put me in min' o' thet li'l' English maverick what herded with us last August. You recollect 'im, Chip—one eye-glass 'n' a hired man fer to tote his shotgun!"

Few cow-men, however, are troubled because of a cur-dog's vanity; therefore, they submitted to his patronizing familiarity and rebuked him not. They loved him for his grit, his speed, his brains. They flattered him and spoiled him, sharing, on common terms, their board and bed—especially the bed composed of a rolled-up blanket with Joe on the outside. Of course, there were fleas—hundreds of fleas—but a hero of the plains soon learns to overlook the little things of life; besides, it was good to feel a warm dog in the small of a fellow's back when the wind was nippy and from the north. Thus Joe waxed fat and prospered in his pride.

It is strange how a mongrel's breeds will crop out singly, and, for the time being, dominate all other traits; yet this was the case with Joe. In a fight of any kind his bull-Irish came to the fore with a rush, the undershot jaw figuring as a conspicuous racial mark. The wolf-hound strain developed solely when he caught a lean, healthy jack-rabbit in a straightaway race, brought him into camp, and ate him before the eyes of an admiring crowd. His keen, pathetic sensitiveness was no doubt inherited from the collie stock; but of that there is more to follow.

At present Joe's cur-dog intelligence and sense of humor lay uppermost, leading him to the performance of tricks. These he could do without number, fetching, carrying, or standing on his hind legs to beg for bacon and applause. He could imitate a bucking bronco or a pawing bull. Also, he said his prayers in the manner of certain far-distant Christians—a feat, by the bye, which none of his associates had achieved in years. He named the values of poker-chips by barks, and, finally, could nuzzle a deck of evil-smelling cards, selecting therefrom any named ace or deuce-spot, an accomplishment which was voiced abroad and thrilled the great southwest with wonder and delight.

Is it, then, to be marveled at that a carelessly born cur-dog, alone and surfeited with adulation, should weaken and lose his grip on modesty? Joe lost it, but not irrecoverably, for about this time he met his Waterloo, and a mangy Napoleon rested for a space on the isle of mortification.

CHAPTER IV.

A light frost fell, and with it came the coyotes. Joe had never seen a

coyote, and his interest was aroused—Irish interest, mixed with American superiority. A lazy white moon swung over the horizon, quenching the camp-fire's glow and flooding the plain with a ghostly glory. From far away in the east came a melancholy yapping, and Joe rose up and listened. Suddenly, from nowhere, appeared the first coyote—a splendid, strapping specimen, with yellow black flanks and a flaunting, feathered tail. He took a clump of sage-brush at a bound, lit on his haunches, pointed his nose toward the sky's dome, and loosed one quivering ghoully wail.

As has been said, the dog was interested. There was something more. He was stricken dumb—paralyzed—by this cool effrontery. Here was an arrogant stranger, sitting—without the courtesy of invitation—upon Joe's own prairie, disturbing the peace in a hateful, alien tongue. The serene cheek of it! A devil-lipped pitch-imp! yapping at Joe's moon!

A pair of pathetic collie eyes swept slowly round the circle of recumbent cow-men, resting at last upon the master, and seeming—in camp vernacular—to inquire, as plain as words: "Fer Jeroosy's sake, Mr. Moseby, what it is?"

A camp humorist kindly supplied the information.

"That there's a hell-warbler. Sick him, Joe."

Joe took the suggestion without parley. A noiseless brown streak made out toward the serenader, but Mr. Coyote saw it coming. He ended his song with a crisp crescendo and departed in an easy, shambling lope. The dog was too much occupied to hear the coarse ripple of amusement following his exit, or to see the master stir a sleeper with his foot and remark, with a widening grin:

"Come, git up, Tony, 'n' see the spote. My dawg's a linkin' it after a ki-yote."

A more perfect stage could not have been desired; the moon for footlights, Tonque and nineteen cow-men as the audience, a coyote for comedian, and Joe, of course, the star. The chase went south for half a mile, doubled itself, and passed the camp again, the maneuver being repeated six separate times, apparently for the benefit of those who watched. It was a close race, too, or seemed to be, for seldom was the cur's black muzzle more than a yard or so behind his victim's tail.

Never before had the wolf-hound breed cropped out so strongly. Joe ran low; his muscles ached and burned, his eyes protruded, and he whimpered in desire; yet, strive as he would, he failed to reduce the lead, while the beast in front reeled onward with a shambling lope. Think of it! A lope!

But now Joe gained. He moaned aloud with joy. His blood was up, and he went for his enemy in crazy,

heart-breaking leaps. Three times he snapped, and bit nothing, but his own dry tongue; then something happened. The coyote, tiring of the game, took his foot in his hand, so to speak, and faded away as a woodcock leaves a weasel.

Joe sat down and thought about it. Nothing short of a pistol-ball could travel like that little black dot on the far horizon. There was something wrong about the whole affair, but just what the cur-dog could not figure out. Possibly the cow-men might enlighten him and offer sympathy; so, with this false hope at heart, he went back slowly, his hot breath coming in labored gasps, his stump tail sagging sadly. His reception, however, was very different from the one so fondly hoped for. Instead of pats and a courteous explanation, they greeted him with a roar of vulgar laughter—a taunt which stung him to the very quick.

That dogs are sensitive to ridicule is a fact too patent to admit of argument; but collies, perhaps, are the most humanly sensitive of all. And this is where Joe's collie breed cropped out to stay. He was stunned at first. He couldn't take it in; but when the taunts continued, the dog's already heated blood began to boil. He was fighting for his last torn shred of pride—and pride dies hard.

He crouched beside the camp-fire, his rough hair bristling down his spine, his ugly nose distorted by an uglier wrinkle still. And when at last Sprig Flannigan—the humorist, by the way, who had sicked Joe on—laughed louder than the rest, and pointed a derisive finger at the hero fallen low, then the cur saw red and forgot to be a gentleman.

At best a rawhide boot is a rather tough proposition, but Joe bit through it, through the trousers beneath them, through flesh and sinew, till his strong teeth met. With a bellow of rage and pain, the humorist wrenched away and reached for his big blue gun. He was a quick chap, but Chip Moseby was a fraction quicker. His hand flew out and disturbed the pot-shot aim, while the bullet went whining out across the prairie, impairing the market value of an innocent long-horn.

"Drop it!" commanded Chip, then added, by way of pacifying argument: "Ef you had made a screamin' ass of yo'self like Joe had, an' we'd 'a' laughed at you, burn me if you wouldn't want to cut our throats!"

This was logic, but Sprig, in his misery, failed to see it. He, too, was Irish. His fingers tingled on his smoking gun, while he urged his death-claim with a quivering chin.

"Th' murderin' devil's whelp! He's chewed a piece outer me leg."

Chip Moseby retorted promptly and heartlessly.

"Well, charge the so' place up to profit an' loss, an' run an' tell yer mommer. Now shet up, or I'll bloody yer nose."

This, also, was logic; besides, Sprig's nose had been bloodied once before, and memory lingered. Therefore, he dropped the discussion in a Christian spirit, tied up his leg with a whisky-soaked rag, and strove to forget the incident.

CHAPTER V.

So much for the man's wound. The dog had received a deeper one—larger and mor pitiless. A bull's-eye had been made of his vanity, and only death or the coyote's blood could soothe the pain away.

Next morning he tried to persuade himself that it all had been a dream; but Sprig Flannigan limped, and a dog's heart doesn't ache so fiercely because of dreams. The day dragged on, but reached a close at last. A purple twilight came sneaking over the west, deeper, darker, till the lazy moon arose, and again the camp-fire paled—a lonely, flickering blotch on a vast white sea. And silence fell—God's silence which even a whisper mars.

From out the east a whisper leaked

—a faint yap! yap! that rose and sank again. Joe heard it, and strove to give no sign, but his hair would rise, and his lips rolled back from his yellow fangs. Silence again, more holy than before; then a ghost-beast leaped the sage-brush, squatted and profaned the night with a shattered, driveling howl. "Hi, Joe!" said a merry-hearted gentleman, "there's yer frien' a calling of you. Run along, son, an' play with him."

This sally was received with a shout of mirth, and the dog arose and went; not toward the cause of his degradation, but deep into the silent cattle-herd, where his soul—if dogs have souls—was empty of all save hate and shame alone.

The nights which followed were, to Joe, a living death. With fateful punctuality the hell-warbler jumped the sage-brush and began his haunting serenade. He jeered at Joe, and drove him to the verge of hydrophobia. He called the dog by names unbearable, and dared him to a chase. Joe did try it once, just to prove the paradox to his canine mind. Thereafter he resorted to strategy, and laid for Mr. Coyote but without avail.

This seemed to amuse the cow-men vastly, and each sad failure was a new delight to them. Somehow, they fancied the two words "humor" and "brutality" to be synonymous, and wrought religiously upon that line. They took to tormenting Joe instead of watching his old-time parlor tricks, which now, alas! were played no more. He had no heart for tricks, and even the ace and deuce-spot seemed to have lost their charm. The dog grew thin and hollow-eyed, moaning and battling in his sleep, when false dreams gave his enemy into his jaws.

Then the hell-warbler took to calling in the daytime, bringing his friends and family with him. He would glide into camp and steal something, then glide away unharmed, pursued by raw profanity and a pistol-ball. Joe loathed him, but was ashamed. No longer he waited for the cow-men's nightly jests, but at the sound of the first yap! yap! he would rise from the camp-fire and slink away into the outer darkness, to hide his face from the sight of man. Joe's cup of woe was full—and yet, not quite, for another trouble was to come upon him. His master went away.

Chip Moseby had gone in the night—on a hurry-call—while the dog was stalking a certain coyote many miles from camp. Of course, there might have been a trail, but a heavy rain was falling, which is bad for trails; and when a man in the west simply goes away—well—none but fools, or sheriffs, follow after.

And now was Joe alone indeed. For a time even the coyote was forgotten in a grief for the one square man who had offered pats, low-spoken words, and a sympathetic eye. Shame and bitterness, for a dog, are hard to bear; but grief for a loved one whiped into the Great Unknown is a pang undreamed by man. It rends him, while his dog heart slowly breaks, and he, too, slips away, to hunt—who knows?—till he licks a master's spirit-hand.

The Mexican dog Tonque was lapsing into arrogance of late. Joe thrashed him soundly but got no pleasure out of it, thus proving to himself that his case was bad. Then he wandered away on the prairie alone, and made a find. It wasn't much in itself—a calfskin tobacco pouch—but it belonged to Chip Moseby. Joe nosed it once, and hope came trickling back. And now the collie stock cropped out again, assisted by that other and much maligned canine strain—the cur. Joe noted the distant camp, drew an imaginary line between it and his find, and knew that the master's bronco had traveled north.

This was enough. The ugly ears lay back, the long limbs stretched themselves in a swinging stride. Straight as a shaft toward the pole-star sped a faithful dog, while his heart beat high with a bounding, hungering joy. Somewhere in the north his master waited,

and behind him lay the camp, the jeering cow-men, and a gang of mad coyotes yapping at the stars.

Then, suddenly, Joe stopped—so suddenly that he slid. For a long, long time he sat motionless on his haunches; but at last he arose, looked northward with one wistful glance, and then trotted back to camp.

Now this, in a human, might be called heroic courage, or even majestic pride. In a cur, it has no name; but a brazen hell-warbler was still at large—and the cur remembered it.

CHAPTER VI.

The next time Joe gave Tonque a thrashing, he did enjoy it—to the very marrow; also, he ate a square meal, and began to study the habits of coyotes from a scientific standpoint.

"Say, Joe," said Frisco Jim, with his greasy smile, "why don't you put some salt on yo' cousin's tail?"

Joe passed the jest and insult without apparent notice, for now he had other fish to fry. To be explicit, he went and lay down among the long-horns, hoping the fumes of their smoking bodies might disguise his scent. If Mr. Coyote chanced to wander carelessly among the cattle, as he did at times, then—perhaps! But Mr. Coyote laughed, as one derides a tenderfoot, and bored a hole in the wind with his shambling lope.

This was disappointing, at least from the dog's side of it, but the next encounter proved to be of greater interest to all concerned, and these were many. Joe made a wide detour, assaulted the enemy in his rear, and got him pocketed in a bunch of sleeping cattle. This was well. The coyote's only road to hope lay directly across the backs of several hundred steers; a perilous path, at best, for the beasts rose up in unexpected places, thus causing the racetrack to become lumpy and uncertain. The long-horns are peaceful creatures as a rule; but think, my friend! If you yourself were wakened suddenly from dreams of cuds and luscious grass by a charging coyote and a whimpering, foaming dog, perhaps you would think from a bovine point of view. At any rate, the cattle made progress difficult and uncertain, and once the race was all but run. A big steer tossed the coyote fifteen or twenty feet, but another one tossed Joe at the same instant, so honors were even, so to speak.

And now, indeed, was pandemonium loosed upon the night. The terror-stricken cattle, fleeing from they knew not what, surged backward, bellowing; in frenzy rushing round and round in a swiftly converging circle, tightening into a sort of whirlpool knot, known technically upon the plains as a "cattle mill." In daylight a "mill" is dreaded. At night—well, ask the cowmen.

"Wake up, boys!" screamed Denver Ed, seeking his tethered bronco on the run. "Joe's millin the meat fer to ketch his ki-ote!"

Now, whether or not it was really Joe's design, is a matter beyond the ken of man; but this we know, ere sweet tranquility was restored again, the cow-punchers had expended their uttermost supply of plainsmen's three P's, which is to say—powder, perspiration and profanity. Yet peace and order did arrive at last, and when it came, a little black dot was yapping on the far horizon, while Joe sneaked, panting, into camp, defeated again, but hopeful. The gods had almost smiled upon him, yet with the cow-men he wasn't quite so popular.

Twice more the cur-dog failed—failed by a narrow margin, though—and the days slipped one by one away. Each day was a brooding time for the memories of wrongs and ridicule, a yearning time for the loved one waiting in the north. Each night the coyote took the sage-brush at a flying leap, and stabbed the darkness with his hideous, ghoully cry.

One day Joe lay thinking—hard. Suddenly he cocked his ears, took a short

stroll on the prairie and came back satisfied; then he waited many days for chance and a cold, propitious wind. It came—an icy whistler—tearing from out the east till the Broncos backed their tails against it; while the men shivered and built a bigger fire. At twilight Joe stole out beside a clump of sage-brush, scratching till he made a hole. In this he squatted, his black nose pointing dead toward the blast, the seven senses of his every breed alert for trouble.

Again came night, but without the lazy moon. Again came silence, save for the moaning of the wind; the wind and one other wail—a faint yap! yap! that dribbled from out the east. A horrid note, a very caricature of sound, yet music now to the ears of the waiting dog! Nearer it came, and nearer still; no longer an echo down the wind, but a full, deep-throated challenge, mingled with the pattering of velvet feet. It came, a rush—a swish—the shadow of a ghost-beast sailing over the sage-brush, in a beautiful, unsuspecting leap.

'Twas a perfect leap, high, graceful, grand; but it had its disadvantages. In mid air the coyote saw his fate beneath him, and tried to turn. He did turn, partially, and lit upon his back. In an instant Joe was all over him.

Of the bliss and sublime brutality of that battle in the dark, none save Joe alone will ever know. But, oh, the glory of it! The feel of a scuffling enemy beneath his paws, when teeth met flesh and bone, to lock with a rasping click! The savage joy of a foeman fighting back at last, frothing, tearing, in a coward's fury of despair! The peace which passeth understanding when the quivering brute lay dead!

Joe closed his eyes and rested. His throat-grip was still upon his prey, a grip which relaxed not once till the coyote's body was dragged across the plain, till it lay beside the camp-fire, bloody, limp, and still.

"He's got 'im!" roared a wondering sentinel, and the camp woke up and cheered.

They formed a ring about the victor and applauded him; but he backed away and snarled. He hadn't asked applause. He wanted justice—justice for a dog.

The cowmen looked and marveled. A dozen hands reached out to pat the ugly head, for human beasts can honor courage, even in a lesser beast; but the cur remembered many things. The black nose wrinkled wickedly; the coarse hair bristled down his spine; he barked—one curse of anger and contempt—then turned and left the camp.

In vain they whistled after him; in vain they shouted and called his name. Their voices were lost in the rust of icy wind, and the dog was gone.

Not once did Joe look back. He settled down into a tireless, swinging trot—measured, monotonous—but having for its goal a loved one waiting somewhere in the trackless north. His soul was satisfied; his dog heart beat with the peaceful pride of one who has wiped a stain away. There was blood upon his coat—the blood of an enemy—and Joe could look his master in the face.

LAUGHTER.

BY L. M. THORNTON.

I like the people who are jolly,
I like the people who are bright;
I like a little bit of folly
And a song that's gay and bright.
I like a little hour of pleasure,
With a sunny, cloudless sky,
And the sights my heart will treasure
Are the joy-birds winging by.

I like a little bit of laughter
And a glimpse of dancing feet;
I can face my troubles after
If I've gathered first Life's sweet.
So I want a song of roses
And a tender tale of bliss
That what'er next year discloses
I'll have memory-flowers and this.

A four-part serial by Caroline Crawford Davis begins in Sept. 2 issue.



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Woman and Her Needs

At Home and Elsewhere



Home Economics at M. A. C.

WEDNESDAY morning, July 12, there was held at M. A. C. a conference of club women, domestic science teachers and home women interested in the problem of making better homes. At this meeting Mrs. Calvin, from the Bureau of Education, Washington, was the principal teacher. Mrs. Calvin has been housekeeper, mother and teacher, so each one felt that she would understand the subject as none of the rest could. I would like to give you all she said, but I am not a stenographer and could not take it all down.

In the beginning, the study of Home Economics included only cooking and sewing, but from public schools and colleges came the demand for trained teachers, and it soon developed into Domestic Science and Domestic Art. At present there is a tendency to use a new type of names and we hear of food preparation and food production, hand sewing, machine sewing, textiles, millinery, etc. It is good for a woman to buy food in the market and feed her family; it is good for her to be able to buy material, to use a pattern and sew for her family, but these things are not the whole of household administration. It is more essential to be able to co-ordinate all parts of the housework and run it as a whole; hence household administration divides into home nursing, housewifery, cooking, sewing, etc. It must accomplish comfortable living with reasonable leisure; there must be satisfaction and well-being for all in the home and interest in things outside the home.

Housekeeping is a complicated business and should be treated as such. If you were intending to purchase a millinery business, you would study the stock on hand, study the customers of the store and their tastes, and then study the relation between the two; you would know that if you did not do these things the business would be a failure.

The output of the home should be good citizens. We do not exist merely for our own comfort and must consider more than ourselves for our own pleasure.

Man earns money to bring available comforts into the home; woman must provide for the happiness and well-being of its inmates. The home is the place into which material things go, but out of it more must go, human beings, not just lives.

Household administration can be considered under two heads:

1. The money coming in; the labor available in the home.
2. The inmates of the home; the location of the home, as regards transportation, schools, and health; the social conditions.

Each woman must study her own condition and plan accordingly. Published budgets are not much good; there can be no average budget for the average family but there are certain fundamental principles that can be applied. First of all, there must be enough food; at present, when all food must be purchased, \$1.20 a week for each member of the family is the least allowance; \$2.10 gives enough nourishing food; \$3.00 allows some pleasures for the appetite, but anything more than this is luxury.

We know that a man under average conditions requires 3,000 calories per

day, and if he is doing hard work he requires 4,500 calories per day. We do not always remember that a boy of sixteen requires the same amount. If he does not have it, his growth may be retarded, he may get behind in his studies, and be called lazy and good-for-nothing. The housekeeper may find it necessary to spend one-half of her income for food, but this allowance is unusually large.

Having made the allowance for food, shelter is the next consideration. We must have enough space to breathe in and move in if we are to keep well. A doctor's bill is a luxury. Much is spent to give the poor medical aid but if we gave more attention to proper shelter, much of that money can be saved. The minimum requirement for each person is 420 cubic feet, or a space six feet wide, ten feet long, and eight feet high. The average family of five persons needs a square twenty-four feet wide and twenty-four feet long and eight feet high. This much is necessary, more is a luxury.

Clothing is the next consideration; for ten or twelve dollars a year you can be decently covered, and one dollar a week allows for fair dressing.

The Food Value of Beans

SHE don't know beans," has been a term of reproach as the last limit of intelligence. Yet I am convinced that few women know the value of beans as a food even here in Michigan.

The most expensive type of food needed by the human body is protein. We need, you all remember, 10 to 15 per cent of our food from this source to grow our bodies and rebuild our worn out tissues.

Judged by chemical analysis beans would have a place among the highest protein foods, "containing more protein than the best cuts of meat, beside a little fat and a considerable amount of starch," says the U. S. Bulletin.

Pound for pound they would be more valuable than meat or our best cereals—also both iron and potassium phosphate are especially abundant in bean ash.

Since peas, beans, and lentils contain as much protein as meat, and no other vegetable foods can approach them in this regard, we need not be surprised to learn that they are extensively used among all people who either from necessity or from choice, eat little or no meat. This is but one of many instances of a wise choice of food made long before exact knowledge was able to give the reason for it.

Some food rich in protein will be found in the daily diet of all peoples. The Mongol eats with his rice, which is largely starch, small quantities of fish, fish eggs, and goose livers, but for his supply of proteid materials he relies on his different preparations of bean cheese and on soja sauce made from the soy bean. The Mexican, whose supply of meat is scanty and of a poor quality, uses the native bean or frijole at almost every meal, made into a stew with vegetables and perhaps shreds of sun-dried beef, well spiced with chili or red pepper. The cooking is said to be done now in the unsightly American tin can (in this case a lard or kerosene can), which has almost

supplanted of late years the primitive earthen pot described by travelers. The bean stew or porridge, with the tortilla or cake of pounded corn, makes up the bulk of his food. The puchero or daily stew eaten by the poorer class of Spaniards has lentils for its basis and with the Bedouins and other Asiatic people the porridge of lentils is in constant use. Church mentions twenty species of legumes, some having many varieties, that are raised in India, and there they form an occasional but a staple food among a people who, both by poverty and by religious scruples, are prevented from eating meat.

In early days in the New England states the woodcutter who went out for a day's work in the woods in winter almost always took with him "bean porridge," i. e., beans that had been cooked to the consistency of a thick mush and then frozen in bowls. In each bowl had been placed a string, which served to lift out the contents. By the help of the camp fire the frozen cooked beans were again made into porridge.

Digestibility.

The chief hindrance to a more popular use of beans at the present seems to be their supposed indigestibility. There is a general opinion that while they are suitable for robust people leading an active, outdoor life, indispensable to the soldier's outfit and to the logging camp, welcomed by the hunter and woodsman, and a necessary part of the food of the hard-working poor, they are, on the other hand, unsuitable for people leading a sedentary life, and are generally to be avoided by the invalid and convalescent. Such persons often complain of distress after eating beans, especially if the skins have not been removed, and of a disagreeable evolution of gas in the intestines, testifying, as it does, to the fermentability of this class of vegetables. These foods are, therefore, called "indigestible," by which is meant in com-

mon speech that they give distress or that we are unpleasantly conscious of the digestive process. These symptoms however, do not in general indicate anything as to the extent to which the contained nutrients of a food are absorbed or used in the system. When eaten in reasonable amount by persons in health, it is doubtful if they give rise to unpleasant symptoms. That no bad results attend their use is shown by the important place they have held in the diet since early times.

Bean Cookery.

A matter of great importance is the preparation of the beans, and we might well study some of the earlier methods of cooking to find out why the New Englander could not only chop down trees, but Boston baked beans fed people are famous for the brainiest people in the history of the nation.

In digestion experiments made at the Minnesota Experiment Station by Snyder baked beans formed a considerable part of the diet of healthy men engaged in fairly severe muscular work. The beans had been soaked in soda and water to remove skins and were baked in the usual way, butter being added. When eaten with bread and milk it was found that on an average 91 per cent of the dry matter; 80 per cent of the fat, and 96 per cent of the carbohydrates of the baked beans were digested. When eaten with a diet furnishing considerably more fat somewhat higher values were obtained. It was noted that the carbohydrates were more easily digestible than any of the other nutrients. The protein was more variable than the other constituents in digestibility, ranging in different tests from 72 to 87 per cent.

Considering the experiments as a whole, it is evident that the beans were quite thoroughly digested. It is undoubtedly true that different individuals vary in regard to their ability to digest beans, but it seems fair to conclude that when properly combined with other foods they should not be considered indigestible. As pointed out by Snyder, beans are slow of digestion and require more intestinal work than many foods, but when properly combined with other materials, so that they form a fair part of the ration, the work of digestion is more evenly distributed than when they are used alone or in very large amounts. In using beans in the dietary they are frequently eaten in excessive quantities at irregular intervals rather than in reasonable amounts combined with other foods as a regular part of the ration. It seems fair to conclude that when used in the diet in a reasonable way no difficulty is experienced in digesting beans.

When beans are soaked in soda and water and parboiled to remove skins some of the germ is also removed. The opinion has been advanced that the skins and germs are the parts of the beans which are the most fermentable and produce gaseous products during digestion. Snyder, who has made a number of studies with beans, considers that treatment with a small amount of soda and salt in cooking is an advantage since it hinders the formation of gas.

In Snyder's experiments over a pound of baked beans was consumed per day by men engaged part of the time in active outdoor work. It is his opinion, however, that ordinarily not more than six ounces of baked beans, equivalent to four ounces of uncooked

beans, should be consumed in the daily ration.

Professor Snyder's conclusion is that "when properly cooked they need not be excluded from the dietary of those engaged in light muscular exercise, though they should not form as large a part of the ration as in the case of active workmen leading outdoor lives."

Proper cooking is the crux of the whole bean question as a food.

The first requirement of cooking beans properly is long soaking in soft water or soda, half a teaspoon to a quart. Second, parboiling in soft water until skins will burst.

Then long steady heat applied in baking, or a fireless cooker, or an old New England Dutch oven.

Or the skins strained out to make puree or soup.

And last, added flavors for palatability, of salt, sugar, syrup, fat pork, butter, cream or milk, tomato, mustard, pepper, onion salt, etc.

These are the general principles that should be observed. The soda and mustard assist digestion and the malic acid of apples, if served with beans, will also aid digestion, it is thought.

DORA STOCKMAN.

PROPER FOOD FOR YOUNG CHILDREN.

A little child, three to six years of age, who is carefully fed in accordance with his bodily needs, as these are now understood, receives every day at least

one food from each of the following groups:

1. Milk and dishes made chiefly of milk, most important of the group, as regards children's diet; meat, fish, poultry, eggs, and meat substitutes.
2. Bread and other cereal foods.
3. Butter and other wholesome fats.
4. Vegetables and fruits.
5. Simple sweets.

The relation of food to the condition of the bowels is also an important matter. Grains, particularly those containing the outer or branny layers or coats, are laxative; so, too, are such mildly acid fruits as apples, oranges and grapefruit. So far, therefore, as the important matter of preventing constipation is concerned, coarse grains and mildly acid fruits serve the same purpose. When fruits are to be obtained in abundance, the kind of cereal served is not of great importance. When they are not, the coarser cereals should be used.

To Brighten Linoleum.—Wash with skim-milk and water. Once a month rub over with linseed oil. Or, if a linoleum polish is desired, prepare the following: Palm oil, 2 ounces; liquid paraffin, 18 ounces; kerosene, five ounces. Wash and apply with a cloth. Absorbent Chemical Dusters.—Add one ounce of paraffin oil and one ounce of kerosene to two pints of benzine, and add one dram of oil of eucalyptus. Dip clean cloths in this solution and wring out. Hang out in the air to dry until the benzine evaporates.

Judging Milk in the Laboratory

By FLOYD W. ROBISON

(Continued from last week).

There are some conditions under which we can not consider bacteria to be friendly agents. It is because of this possibility that we urge in addition the employment of cold in the production of milk.

The B. Coli Organisms.

The manner in which the sewage pollution is demonstrated in drinking water is by the isolation of a certain type of germs which we call specifically the gas-producing organisms. These organisms which we refer to are called the B. Coli group. They are found in sewage discharges and occur as well in the fecal matter of domestic animals such as cattle, so that the presence of this particular type of organism is an indication of sewage pollution and in milk the presence of this organism proves that foreign matter like manure, in which this B. Coli group of bacteria are habitually found have in some way or other gained access to the milk.

Drinking water which shows this B. Coli type of organisms is not necessarily a drinking water which contains typhoid but showing a contamination with sewage material it may at any time be a disease-carrying water; in fact, is very apt to be. Likewise milk which shows the B. Coli group of organisms may not necessarily be a milk which will produce an infectious disease, but it is surely a milk containing fecal material, undesirable at any time, and at all times potentially unsafe.

The Limit of Safety—Safety First.

We make it a practice in our inspection methods to condemn any and all milk which shows this organism to exist in 10 cc. quantities. We likewise condemn any drinking water as decidedly unsafe which contains B. Coli in 10 cc. quantities. The public safety is never endangered by a too rigid enforcement but it is many times so endangered by a lax enforcement of this principle.

If we could impress upon dairymen what an exceedingly important indicator bacteria are in their influence for good upon the sanitary surroundings of their farms much will have been accomplished. So much fear has been instilled in people's minds over the desirability of avoiding disease-pro-

ducing bacteria that the very mention of the name has been abhorrent to most dairymen.

We thought that through the widespread publicity which had been given the work of the late Dr. Metchnikoff, the celebrated scientist whose name was attached to the sour milk theory of longevity, that the public would get over the idea that bacteria in themselves were things to be avoided. It is found indeed, that most of the organisms which are present normally in milk are those same organisms which Metchnikoff proclaimed to be fundamental to long life so that various commercial concerns have taken advantage of the hint given by him and have put upon the market food products containing these germs in very large quantities. Clean milk which sours normally becomes a very wholesome article of diet and were bacteria not to be considered as indicators of the presence of other materials in milk it would be necessary for us in each instance to ascertain the kind of bacteria present before we could pass upon the wholesomeness of the milk.

Sour Milk Organisms Usually Predominate.

It seems to us, therefore, very fortunate that while undesirable and unwholesome products get into milk, the sour milk type of bacteria are usually present in larger quantities than any other. Consequently that milk will sour if held a reasonable length of time and by the fact of early souring in this way demonstrate the uncleanness of the milk. If it does not sour when exposed normally, this is in itself an undesirable symptom, because it indicates that other types of organisms are present in greater quantities than is the souring organism and having gained control have kept the souring organism down.

So there are several different ways in which bacteria in milk can be used as very sensitive indicators indeed of the general food qualities and safety of that milk for food. To control them and prevent contamination strict cleanliness must be followed. To keep milk pure and to prevent bacteria from becoming false indicators or false guides, the milk must be kept cold.

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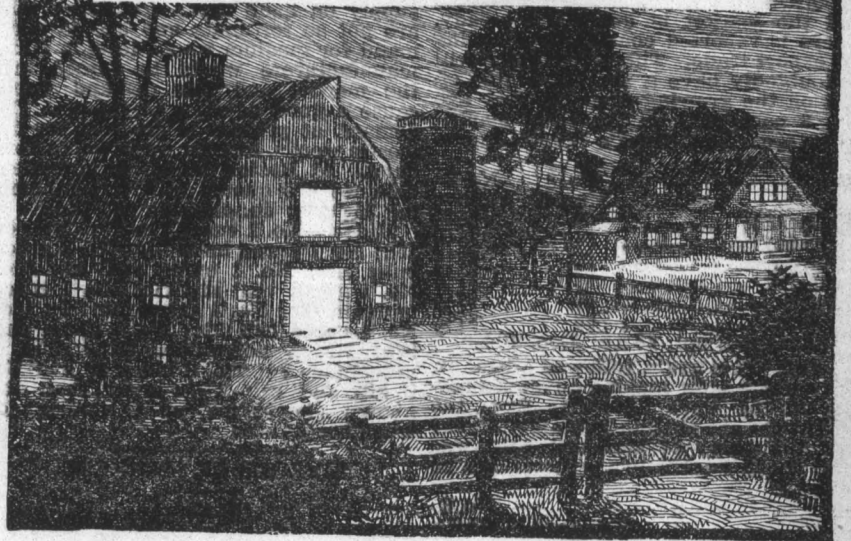
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Markets.

GRAINS AND SEEDS.

August 8, 1916.

Wheat.—The recent advance in the price of this grain, due to reports of serious damage by black rust caused a great increase in the visible supply in this country and Canada. The total wheat visible in the United States now is 44,161,000 bushels; and in Canada it is 19,769,000, making a total of 63,930,000 bushels as compared with 9,718,000 bushels a year ago. Further bear news was indicated in a report from Kansas that farmers were delivering such enormous quantities of wheat that the elevator people lacked storage room for it. A shortage of cars for hauling the grain is also reported. Cooler weather is reported for the rust-affected districts but it is doubted that it will save much of the crop as it has come too late. There is heavy buying of both wheat and flour for export purposes. The present weakness is mainly due to many holders endeavoring to take advantage of the recent advances. One year ago No. 2 red wheat sold on the local market for \$1.13. Last week's Detroit quotations were:

	No. 2 Red.	No. 1 White.	Sept.
Wednesday	1.35	1.32	1.37
Thursday	1.35	1.32	1.37
Friday	1.39	1.36	1.41
Saturday	1.40	1.36½	1.42
Monday	1.38	1.34	1.40
Tuesday	1.38	1.34	1.40

Chicago.—September \$1.33½; Dec. \$1.37 per bushel.

Corn.—This grain shows no change and the market is quiet and steady. There is reported considerable buying for export trade. The recent rains will undoubtedly have a very favorable effect on the growing crop. A year ago No. 3 corn sold on the local market for 81½c. Last week's Detroit quotations were:

	No. 3 Mixed.	No. 3 Yellow.
Wednesday	84	85½
Thursday	84	85½
Friday	85	86½
Saturday	86	87½
Monday	86	87½
Tuesday	86	87½

Chicago.—Sept. 83¼c; Dec. 70¾c.

Oats.—This grain followed wheat in the decline after making advances earlier in the week. Reports from the northwest are still unfavorable. A year ago the price of standard oats was 60c. Last week's local quotations as follows:

	Standard.	No. 3 White.
Wednesday	42½	41½
Thursday	44	43½
Friday	44	43½
Saturday	44½	44
Monday	43½	43½
Tuesday	43	43

Chicago.—Sept. 43¾c; Dec. 46¾c.

Rye.—This grain is firm at an advance of 5c over last week. The demand is good. Cash No. 2 is selling at \$1.02.

Beans.—This market is inactive and prices are lower than last week. The offerings are small. Immediate and prompt shipment is quoted at \$5.50; October \$3.77. At Chicago beans are firmly held. There is practically no open market, most of the beans coming in being purchased outside. Demand for consumptive purposes is all that exists. Michigan hand-picked pea beans are quoted at \$6.75@7; common to good \$5@6.50; red kidneys \$6@6.10 per bushel.

Seeds.—Prime red clover \$9.75 per bushel; prime alsike \$9.40; prime timothy \$3.10; alfalfa \$10@11.

DAIRY AND POULTRY PRODUCTS.

Butter.—Market is firm and ½c higher. Extra creamery 28c; firsts 27c; dairy 23c; packing stock 21c.

Eggs.—The hot weather is shortening supply. Very little butter will grade up to extras. Price for the week based on sales is 28½c.

Chicago.—The market is firm and the late advances are well maintained. There is very little good butter coming. The demand is good and receipts are smaller. Extra creamery 28½c; extra firsts 27½@28c; firsts 26@27c; packing stock 22@22½c.

Eggs.—The best candled eggs are firm; other grades steady. Prices are unchanged. Current receipts are quoted at 21½c; firsts 24c.

Chicago.—The feeling still continues firm and the general market favors holders. Receipts are light for this time of the year and demand is good, especially for good stock. Firsts 23@23½c; ordinary firsts 22@22½c; mis-

cellaneous lots, cases included 19@22½c per dozen.

Poultry.—Hens and broilers are lower but the market is firm at the decline. Fowls 17@18½c; broilers 21@25c; ducks 17@19c; geese 12@13c.

Chicago.—Prices for fowls are slightly higher than last week and demand is fair. Shippers are urged not to crowd coops during hot weather. Hens 16@17c; roosters 12½c; spring chickens 18@18½c; ducks 12@13c; spring geese 12c.

FRUITS AND VEGETABLES.

Cherries.—The supply of cherries is moderate. Sour cherries are selling at 1.75@2; sweet \$2.25 per 16-qt. case. At Chicago the market is firm with Montmorencies selling at \$1.50@1.65; Windsors \$1.50@2.

Small Fruits.—All small fruit scarce. Gooseberries \$1.75@2 per 16-qt. case; black raspberries \$1.75 per bu; red raspberries \$6@6.50 per bu; red currants \$2.75@3 per bu; blackberries \$4.25@4.50 per bushel.

Chicago.—Gooseberries 50c@1.25 a 16-qt. case; dewberries and Wilson blackberries 75c@1.75; black raspberries \$1@1.75; reds 75c@2.50 per 24-pt. case, red currants 50c@1; cherry currants \$1@1.25.

Peaches.—Michigan clings are selling at 18c per one-fifth bushel basket, and 50@60c per climax basket at Chicago.

WOOL AND HIDES.

The condition of the wool market is quiet but strong. There is no doubt as to the tendency of prices, although some think that growers will have to be content with small further increases in order that the manufacturer can do business at a profit. On the other hand, while some mills have a good supply on hand there are others who are not so fortunate and should a demand for medium wools develop many manufacturers would be forced into the market and this demand would cause a good advance in prices. The demand at present is greatest for domestic wools, foreign wools being very quiet. At Boston Michigan unwashed delaines are quoted at 35c; do. combing 35@42c; do. clothing 29@31c.

Hides.—No. 1 cured 19c; No. 1 green 16c; No. 1 cured bulls 14c; No. 1 green bulls 12c; No. 1 cured veal kip 23c; No. 1 green veal kip 18c; No. 1 cured murrain 18c; No. 1 green murrain 16c; No. 1 cured calf 29c; No. 1 green calf 27c; No. 1 horsehides \$5.50; No. 2 horsehides \$4; No. 2 hides 1c and No. 2 kip and calf 1½c lower than the above; sheepskins, as to amount of wool, 50c@1.25.

LIVE STOCK MARKETS.

Buffalo.

August 8, 1916.

(Special Report of Dunning & Stevens, New York Central Stock Yards, Buffalo, N. Y.)

Receipts here today as follows: Cattle 150 cars; hogs 75 d. d.; sheep 15 d. d.; calves 1200 head.

With 150 cars of cattle here today, there were around 15 loads of shipping cattle and the trade was very slow, and the bulk of them sold a quarter lower, although there were few loads of Canadians sold early at about steady prices. There was a good demand for butcher steers, heifers and cows and they sold fully steady. We look for a fair run of cattle here next Monday and no more than a steady market.

We had a moderate supply of hogs today, counting what was carried over from the close of last week footed up a total of about 75 cars, demand was quite good, prices generally 10c higher than Saturday's close, the bulk selling at \$10.35, a few choice at \$10.40; pigs and lights around \$10; roughs \$9; stags \$7@8. Quite a number of hogs are still holding off the market and with light supply in sight for the next few days looks like we should have a little better trade, but would not look for any sharp advance.

Sheep receipts were light again today and prices were about steady with the close of last week on sheep and lambs. Prospects about steady.

We quote: Best spring lambs \$11@11.25; cull to common lambs \$9@10.50; yearlings \$7.75 to \$9.50; bucks \$5.50@6; ewes \$7@7.75; cull sheep \$3.50@6; wethers \$8@8.25; top veals \$11.75@12; heavy \$9@10.50; common and light \$10@11.50; grassers 5.50@7.50.

Chicago.

August 7, 1916.

Cattle. Hogs. Sheep.
Receipts today..14,000 26,000 18,000
Same day 1915..22,966 23,935 12,902
Last week.....45,651 131,355 80,717
Same wk 1915..39,161 125,449 71,545
Cattle were in small supply today, but the hot weather prevented buyers from needing many, and prices averaged up to \$10.40 at an early hour. Hogs

were advanced as much as 10c, with the best bringing \$10.15. Lambs soared higher, with prime lots taken at \$11.50. Hogs marketed last week averaged 231 lbs.

Beef steers did not act very well the past week and only a few of those selling above \$9 escaped without showing any depreciation. The bulk of native steers showed 10@15c decline from a week ago and despite a little better call for dressed beef the packers were not anxious for most offerings. Best cows and heifers looked about steady but this class was in small proportion and other grades which formed the bulk declined 25@40c. Canner grades were 10@15c lower and cutter stock showed a loss of 15@25c. Stockers and feeders are finding a very limited outlet at this time and a new recession of 10@15c in the week was recorded. Calves were the only offerings in urgent demand and they finished 25@40c higher than a week earlier. Best heavy steers went at \$10.35 and \$10 stopped the best yearlings. Most of the natives landed at \$8@9.50, only a small proportion passing \$9.75 because of the scarcity of matured cattle which are certain to advance in the near future. A few heifers sold at \$8@8.75 but the most of them went at \$6.75@7.50. Beef cows seldom passed \$7.25 and a good class went at \$6.25@6.85. Canners sold at \$4.25@4.75 and cutters at \$5@5.25. Bulls were steady with the previous week but in mid-week showed an advance of 15@25c, this upturn being eliminated at the close. Good bolognas went at \$6@6.50, a few on the high spot making \$6.75. Butcher bulls went largely at \$6.25@6.60, a few young beef animals landing at \$6.75 and higher. Not many feeder steers sold above \$7.50 and a plain to good class made \$6.75@7.25 while stockers were most numerous at \$6@6.65. Veal calves reached \$12.50, the bulk going at \$12@12.25 and only big weight animals sold downward from \$8.75. Range cattle numbered 4,400, the biggest run of the season to date and sales were 15@25c lower at \$6.85@8.50, not many passing \$7.40.

Tops on hogs for the week ranged at \$9.90 on the low day up to \$10.05 at the high spot. While the spread became unusually wide in mid-week between common and best offerings, the range narrowed up again near the close as country owners shut off the supply of coarse heavy sows considerably to check the decline. Closing prices for most hogs looked 15@20c lower than a week earlier, with some of the butchers and choice heavy showing 25c decline. On the other hand, 170 to 225-lb. grades were not over 5@10c lower. Pigs were in fairly good demand but buyers managed to force a decline of 10@15c at the close. General quality was fair and the scarcity of choice light weights and light butchers has brought them up to a premium level, the outlet for prime heavy having slackened slightly. Big packers are getting few of the prime offerings these days as small concerns and eastern shippers have such urgent orders that they absorb the crop daily. At the week's close hogs sold at \$9@10.05 but only Canadian "singers" sold above \$10. However, sales at \$10 included offerings weighing 189 to 352 lbs. A week earlier the range of sales was \$9.10@10.15. Pigs closed at \$8.75@9.40.

The demand was best in the sheep house for lambs and consequently such offerings sold to best advantage. Closing prices for native lambs were 25@35c higher than a week earlier and rangers showed 40@50c advance, with feeding grades steady. Native sheep finished steady to 15c higher and rangers steady to 15c lower. Breeding ewes and feeding sheep were active and steady throughout. New record prices for summer shipments of lambs were scored. Quality was of a good standard and there was seldom much sorting demand, consequently the number of feeding lambs available was exceptionally small. Native lambs closed at \$8@11 and rangers at \$11.20@11.50, Idahos making the latter figure. Some Washington lambs made \$11.05. Sheep made \$3.50@8.40, ewes selling at \$7.75 for the best, yearlings \$7@8.75 and ed 10@15c higher, with sales of steers bucks \$5@5.50. Feeding lambs sold at \$9.60@9.65, feeding ewes at \$5@6, wethers \$6.75@7 and breeding ewes at \$6.50@9.75.

SHEEP BREEDERS MEET.

The thirtieth annual meeting of the Improved Black Top Delaine Merino Sheep Breeders' Association will be held at Clay Stock Farm, the home of Mr. and Mrs. Carl Moeckel, near Munith, Mich., Wednesday, August 16. All lovers of sheep, of all breeds of sheep, all who never saw a sheep and would like to know something about sheep and wool, are very cordially invited to be present at this meeting.—O. M. Robertson, Secretary.

GOVERNMENT CROP REPORT.

A summary of the August crop report for the state of Michigan and for the United States, as compiled by the Bureau of Crop Estimates (and transmitted through the weather bureau), U. S. Department of Agriculture, is as follows:

Corn.

State.—August 1 forecast, 49,400,000 bushels; production last year (final estimate), 56,000,000 bushels.

United States.—August 1 forecast, 2,780,000,000 bushels; production last year (final estimate), 3,054,535,000 bushels.

All Wheat.

State.—August 1 forecast, 12,600,000 bushels; production last year (final estimate), 20,448,000 bushels.

United States.—August 1 forecast, 654,000,000 bushels; production last year (final estimate), 1,011,505,000 bu.

Oats.

State.—August 1 forecast, 45,000,000 bushels; production last year (final estimate), 64,260,000 bushels.

United States.—August 1 forecast, 1,270,000,000 bushels; production last year (final estimate), 1,540,362,000 bu.

Barley.

State.—August 1 forecast, 2,010,000 bushels; production last year (final estimate), 2,508,000 bushels.

United States.—August 1 forecast, 195,000,000 bushels; production last year (final estimate), 237,009,000 bu.

Rye.

State.—Preliminary estimate, 5,290,000 bushels; production last year (final estimate), 6,045,000 bushels.

United States.—Preliminary estimate, 41,900,000 bushels; production last year (final estimate), 49,190,000 bushels.

Buckwheat.

State.—August 1 forecast, 989,000 bushels; production last year (final estimate), 870,000 bushels.

United States.—August 1 forecast, 17,100,000 bushels; production last year (final estimate), 15,769,000 bushels.

Potatoes.

State.—August 1 forecast, 31,500,000 bushels; production last year (final estimate), 20,945,000 bushels.

United States.—August 1 forecast, 364,000,000 bushels; production last year (final estimate), 359,103,000 bu.

Hay.

State.—August 1 forecast, 4,360,000 tons; production last year (final estimate), 3,458,000 tons.

United States.—August 1 forecast, 84,600,000 tons; production last year (final estimate), 85,225,000 tons.

Pasture.

State.—August 1 condition 76, compared with the ten-year average of 78. United States.—August 1 condition 86.9, compared with the ten-year average of 81.6.

Apples.

August 1 forecast, 4,810,000 barrels; production last year (final estimate), 3,150,000 barrels.

United States.—August 1 forecast, 71,600,000 barrels; production last year (final estimate), 76,670,000 barrels.

Peaches.

State.—August 1 forecast, 2,060,000 bushels; production last year (final estimate), 2,360,000 bushels.

United States.—August 1 forecast, 40,300,000 bushels; production last year (final estimate), 63,460,000 bushels.

Beans.

State.—August 1 condition 80, compared with the year average of 87. United States.—August 1 condition 82.3, compared with the ten-year average of 85.7.

Prices.

The first price given below is the average on August 1 this year, and the second the average on August 1 last year.

State.—Wheat 112 and 103c per bu. Corn 78 and 76. Oats 42 and 51. Potatoes 97 and 49. Hay \$10.70 and \$11.80 per ton. Eggs 23 and 18c per dozen.

United States.—Wheat 107 and 106.5 cents per bushel. Corn 79.4 and 78.9c. Oats 40.1 and 45.4c. Potatoes 95.4 and 56.3c. Hay \$10.70 and \$11.02 per ton. Cotton 12.6 and 8.1c per pound. Eggs 20.7 and 17.0 cents per dozen.

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THIS IS THE LAST EDITION.

The first edition is sent to those who have not expressed a desire for the latest markets. The late market edition will be sent on request at any time.

DETROIT LIVE STOCK MARKET.

Thursday's Market.
August 10, 1916.
Cattle.

Receipts 2745. The market opened at the local stock yards with another heavy supply of cattle on sale, a large portion of it being of an inferior quality, while the general market was a trifle more active, prices were no higher than they were a week ago. One bunch of extra good steers brought \$8.75, which was the top; they were bought by Parker, Webb & Co. The demand from the country is still light for stockers and feeders, owing to the recent dry spell and shortage of pasture. Milch cows were dull and few good ones were in the receipts. Prices ranged as follows: Best heavy steers \$8@8.75; best handy weight butcher steers \$7@7.50; mixed steers and heifers \$6.50@7; handy light butchers \$6@6.25; light butchers \$5.50@6; best cows \$6@6.25; butcher cows \$5@5.50; common cows \$4.50@4.75; canners \$3.50@4.25; best heavy bulls \$6@6.50; bologna bulls \$5.50@6; stock bulls \$5@5.50; feeders \$6.50@7; stockers \$5.50@6.50; milkers and springers \$4@7.50.

Bishop, B. & H. sold Mich. B. Co. 2 bulls av 1415 at \$6.50, 2 do av 880 at \$6, 1 do wgh 1380 at \$6.25; to Bray & B. 8 stockers av 667 at \$5.75, 4 cows av 905 at \$5.25, 3 do av 903 at \$5.50, 2 do av 850 at \$4.25, 14 stockers av 666 at \$5.50, 16 cows av 1053 at \$5.75; to Breitenbeck 20 steers av 906 at \$7, 4 heifers av 900 at \$6; to Garber 11 butchers av 650 at \$6.25, 7 do av 764 at \$6.60; to Parker, W. & Co. 22 steers av 1106 at \$8.75, 3 do av 1027 at \$7.50, 8 do av 1043 at \$7.50; to Sullivan P. Co. 13 do av 1055 at \$7.75, 1 cow wgh 900 at \$5.50, 5 butchers av 904 at \$6.50, 16 do av 803 at \$6.25, 1 cow wgh 980 at \$6, 19 steers av 971 at \$7.25; to Breitenbeck 15 butchers av 864 at \$6.30; to Bray & B. 22 stockers av 621 at \$5.50; to Parker, W. & Co. 2 bulls av 1015 at \$6, 5 cows av 796 at \$4.25, 3 bulls av 1083 at \$6, 3 do av 970 at \$6, 2 cows av 1110 at \$4.25, 34 steers av 858 at \$7, 4 cows av 940 at \$4.25; to Nagle P. Co. 7 stockers av 891 at \$6.85; to Bray & B. 16 stockers av 740 at \$5.50, 3 cows av 910 at \$5.75, 4 do av 905 at \$5.65, 13 stockers av 590 at \$5.60; to Nagle P. Co. 11 butchers av 924 at \$6.85, 8 do av 840 at \$6.50; to Sullivan P. Co. 13 do av 773 at \$6.50, 10 do av 850 at \$5.50; to Golden 9 do av 850 at \$5.50.

Haley & M. sold Mason B. Co. 8 butchers av 600 at \$5.75; to Walsh 5 stockers av 608 at \$5.80; to Golden 2 butchers av 675 at \$5.35; to Spera 2 steers av 635 at \$6, 1 do wgh 800 at \$6.85; to Thompson 9 do av 910 at \$7, 2 bulls av 1035 at \$6; to Gueritch 5 butchers av 786 at \$5.50; to Sullivan P. Co. 1 bull wgh 1400 at \$6.25, 2 steers av 1090 at \$7.25, 5 do av 880 at \$6.75, 4 do av 1150 at \$8.25; to Nagle P. Co. 2 do av 675 at \$6.10; to Mason B. Co. 1 bull wgh 1320 at \$6.25.

Erwin & S. sold Sullivan P. Co. 4 butchers av 950 at \$6.25, 2 cows av 960 at \$5, 4 do av 975 at \$5.50, 1 do wgh 860 at \$4.75; to Mich. B. Co. 16 steers av 1030 at \$7.35; to Bresnahan 8 butchers av 600 at \$6; to Sullivan P. Co. 4 steers av 995 at \$7.60; to Nagle P. Co. 5 do av 900 at \$7.

Veal Calves.

Receipts 980. The veal calf trade was full steady with last week, bulk of the good ones selling at \$12 per cwt., and now and then a bunch of extra fancy at \$12.25; heavy grades dull at \$6@9.

Sandel, S., B. & G. sold Thompson 3 av 155 at \$10.50; to Sullivan P. Co. 2 av 205 at \$10, 3 av 175 at \$11.75; to Ratkowski 1 wgh 140 at \$12, 4 av 250 at \$8.35; to Burnstone 8 av 190 at \$10.75, 11 av 150 at \$11.

Sheep and Lambs.

Receipts 2625. The sheep and lamb trade was active, the best selling at \$11; bulk of good lambs at \$10.50; heavy common sheep dull and not wanted. Best lambs \$10.50@11; fair lambs \$9.50@10; light to common do. \$8@9.25; fair to good sheep \$5.50@6.50; culls and common \$3@5.

Sandel, S., B. & G. sold Thompson 84 lambs av 73 at \$10; to Sullivan P. Co. 22 do av 75 at \$10, 53 do av 80 at \$10.50, 95 do av 75 at \$10.50, 30 sheep av 150 at \$5.75, 26 do av 130 at \$5.75.

Hogs.

Receipts 4075. Hogs are again climbing up rapidly in price and have been getting higher every day this week. Today Chicago, with 19,000 is 15c higher than yesterday, the top being \$10.60. Here prices are 10@15c higher than on Wednesday on yorkers and heavy selling at \$10@10.35; pigs holding about steady at \$8.75@9.50.

A Great Increase in Railroad Wages Means Higher Freight Rates and a Burden on Agricultural Prosperity

Do you think the railroads ought to increase the wages of their highly paid train employes \$100,000,000 a year?

No great increase in railroad wages can be made without directly touching your pocketbook. Out of every dollar you pay the railroads 44 cents goes to the employes.

Compare the wages of these men (who have refused to arbitrate their demands for higher wages, and are threatening to tie up the country's commerce to enforce them) with those of other American workers—with yours.

On all the railroads in 1915 three-quarters of the train employes earned these wages:

	Passenger		Freight		Yard	
	Range	Average	Range	Average	Range	Average
Engineers	\$1641	\$2067	\$1455	\$1892	\$1005	\$1526
	3983		3505		2445	
Conductors	1543	\$1850	1353	\$1719	1055	\$1310
	3004		2932		2045	
Firemen	943	\$1203	648	\$1117	406	\$924
	2078		2059		1633	
Brakemen	854	\$1095	755	\$1013	753	\$1076
	1736		1961		1821	

You have a direct interest in these wages because the money to pay them comes out of your pocket.

Low freight rates have given American farmers command of the markets of the world.

With two-thirds of the cost of operating railroads the wages paid labor, any great increase in labor cost inevitably means higher freight rates.

A \$100,000,000 increase in railroad wages is equal to a five per cent. increase on all freight rates.

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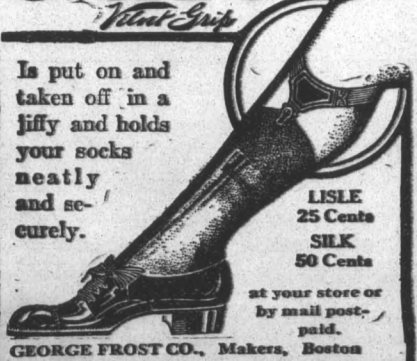
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The railroads have urged that the justice of these demands be determined by the Interstate Commerce Commission (the body that fixes the rates you pay the carriers), or by a national arbitration board. The employes' representatives have refused this offer and have taken a vote on a national strike.

This problem is your problem. The railroad managers, as trustees for the public, have no right to place this burden on the cost of transportation to you without a clear mandate from a public tribunal.

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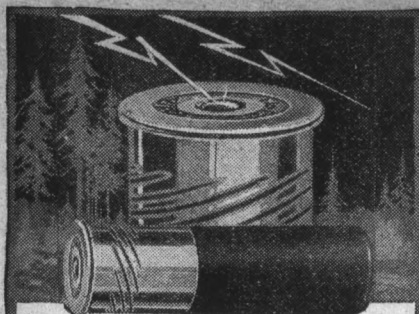
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staves—16x32—conical white pine roof, but little
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When Writing to Advertisers Please
Mention The Michigan Farmer.

Farm Commerce.

Starting a Parcel Post Market

By W. C. SMITH

THREE years ago the installation of a parcel post was hailed as the means whereby the farmer—especially the small farmer, would find salvation in marketing those things which he had formerly been compelled to sell on indifferent markets or to not sell at all. It promised a direct route to a trade that was eagerly waiting to gobble up the things of the farm at a fancy price.

The express companies had made shipping heretofore prohibitive and had robbed both consumer and producer, or at least that was the generally accepted idea. That express rates were much too high, and that the express companies were operating at a cost to the shipper which might be materially lessened, has been convincingly proven, as witness the lowered rates to meet parcel post competition.

Furthermore, a great many preachers who understood neither the producer nor the consumer but who only knew that the parcel post did offer an excellent channel of trade, began to preach the value of the parcel post to the farmer, using the attractive lure of big prices for products as a text. Three years has proven the worth of the parcel post system. It has demonstrated that as an avenue of selling it may be of much benefit to the farmer with even a small amount of produce to sell—yet there are many who have suffered disappointment and who have not found the system to be of value to them. The fault is not with the system itself.

What Does the Buyer Want?

Salesmanship is an art that deserves much attention from the man who intends to sell his production instead of merely allowing it to be bought by the huckster or the commission man. Some of the largest salaries paid go to men who have made a study and a subsequent success of this difficult calling. Good salesmen, men who can override competition and get the business for their own firm, men who understand reaching out after the dollars, that will go into someone's coffers and who can hold trade after once it is established are in demand and here it is that the man who begins to utilize parcel post usually makes the first mistake. He does not understand his market. How many producers have an adequate con-

ception of the needs or the methods of the city buyer? They are very few. The knowledge of prices paid or quality received by those who trade exclusively in the cities is hazy at best and few farmers obtain it first handed. He knows but little of what these buyers demand and, to be frank about the matter, very little about how to go about filling the demand.

The competent salesman studies these matters. He makes it his business to know the demands and the habits of his trade, and profits in so doing. He knows wherein his advantages lie and how to bring them to bear in the best possible manner. The man who contemplates retailing his product to city customers has more to contend with than may be apparent at a quick survey of the field and in order to make a success of the farm to consumer method it is absolutely necessary that the selling game be studied from a variety of angles. Failure to understand properly the fundamentals of the selling proposition has caused more failures and dissatisfaction with parcel post as a trade route than all other causes combined.

Good Products Essential.

In the first place, it is imperative to understand how to produce for the class of trade that is worth while. Then, after production comes the necessary factor of properly packing and making attractive the thing you have to offer. Next there is the study of comparative prices. Goods cannot be sold on basis of selling price alone; they must have merit; they must be attractive and demand attention and must be backed by a responsible guarantee. There is the proposition of securing customers and of keeping them, of how to secure best results through advertising and how the greatest saving may be made in packing and handling before delivery. Collections form a snag which swamps many a direct selling venture—and the failures are not confined to farmers and others who market from the farm. Making collections is one of the most difficult problems which any retailer has to face and its solution depends a great deal upon the manner in which the business is begun.

Prices Must be Fair.

It may be taken for granted that

anyone who can produce up to the standards of the locality in which he lives can find buyers at the end of some parcel post route if he can only finish his product and get it to them in attractive condition. Finishing a product for a select city trade means that it must come up to their standards instead of the local idea and pains should be taken to determine what this standard is. Of course, where one is producing an article of superior merit, and knows it, he himself can make the standard and that is the better way. However many of us must accept standards as they are and try to make our output live up to them. If we aim to specialize, and almost everyone has some one thing which he believes he can produce best, we should investigate from the standpoint of that article alone and it is good policy to start little and grow big—that is, add other articles as success comes, and as the need arises. Prices must be fair, for the city buyers, while paying well for quality, do not relish paying more than a thing is worth any better than other folks. It can readily be seen that one profit and one charge for total selling expense naturally leaves more money to be divided between seller and consumer than where the article must travel through three or more hands as is usually the case in the regular channels of trade. Whether or not the consumer can get much benefit of this depends a great deal upon the expenses of the man who sold the article. Very likely he can guarantee two things which will make his customer willing to pay more instead of haggle in order to buy cheaper. These things are freshness and the fact that they have received special attention in order to fit them for particular people. There is one overhead expense that few beginners consider until it is too late to rectify the mistake without beginning anew, and that is the cost of obtaining customers. However they are found it will cost something to get them. Several methods have been advocated and in Chicago and some of the other larger cities, bureaus are maintained to assist the farmer in finding a customer and in assisting those who desire farm produce direct in finding a supply. Newspaper advertising, mailing lists and the direct appeal, building up word of mouth advertising from a few customers at the start, and other methods, have their worth and their champions. It is usually conceded, however, that newspaper advertising, if properly managed, is one of the best methods and the cost of advertising must necessarily be added to the expense of selling goods.

Making Collections.

The best method of collecting is undoubtedly the cash with order system, and this is perhaps the only absolutely certain method until one has an established trade. Some customers are in the habit of paying all bills monthly and if one is sure of the class with which he is dealing this will no doubt prove satisfactory. In this case, it is necessary to render monthly statements and a more complicated system of book-keeping is necessary. This cost, too, must be added to the selling charges so it is not difficult to see that all of the middleman's profit, which is reputed to be the biggest share of the lot—can be saved. Some of it must go to cover the cost of doing business.

The parcel post system has undoubtedly offered the opportunity for hundreds to add materially to their incomes and there is plenty of room for others. But it is a business proposition, this selling produce direct, and must be regarded as such. The man or woman who has the idea that growing good stuff is all there is to it, has another guess coming. It is not complicated and it is not difficult to find customers—they are everywhere in the cities, but the manner of finding, the manner of caring for them, and the manner of handling the things you wish to market, are things that will bear study.



On Farms where Poor Drainage Makes it Impossible to Have Underground Cellars, a Brick Building with Double Air Spaces Furnishes a Very Satisfactory Place to Store Products for Short Periods.

Grange.

Our Motto:—"The farmer is of more consequence than the farm, and should be first improved."

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Overseer—C. H. Bramble, Tecumseh.
Lecturer—Dora H. Stockman, Lansing.
Secretary—Jennie Buell, Ann Arbor.
Treasurer—Frank Coward, Bronson.
Executive Committee—C. S. Bartlett, Pontiac; Geo. B. Horton, Fruit Ridge; J. W. Hutchins, Hanover; W. F. Taylor, Shelby; Wm. H. Welsh, Sault Ste. Marie; N. P. Hull, Dimondale; Burr Lincoln, Harbor Beach.

FOUR BIG GRANGE RALLIES.

The last week in July the southern counties in Michigan held four of the biggest rallies in its history. Even the weather was in the superlative degree.

The special occasion was the visit of Oliver Wilson, Master of the National Grange, to Michigan.

The first rally was held July 26 at Western Normal, Kalamazoo. About 500 from the southwestern counties attended this first rally to hear and greet the National Master. There was a short program of music and readings which was presided over by J. C. Ketcham, Master of Michigan State Grange, in more than his usual happy manner. "For," said Mr. Ketcham in introducing the guest of honor, "I wanted the National Master to see Michigan, and I wanted Michigan to see the National Master. So it is by no means a one-sided affair."

The second day's meeting at Grand Rapids was attended by more than 700 Grangers from surrounding counties who enjoyed their picnic dinner together and the inspiring program that followed.

The third day the Central Michigan Grangers got together on the beautiful campus at M. A. C., for what was one of the largest gatherings of farmers held there. Nearly 200 automobiles brought in people from the eight surrounding counties, and clear from Antrim county. The Interurbans brought people in from every direction until more than a thousand were gathered in the natural amphitheater in front of the Woman's Building. Here, as at the previous meetings, there was a short prelude of local speakers. President Kedzie had made all arrangements for the comfort of the guests, but was unavoidably detained, and the welcome was given by our honored patron, of M. A. C., Ex-President Snyder. Past Master N. P. Hull responded in his happiest vein. There was music by Mrs. Florence Goodhue, and Miss Hopphan, and a drill by Capitol Grange, readings by Mrs. Florence Trumbull, of Grand Ledge and Miss Lavina Smith, of Fitch-

berg, and songs by Hon. Earnest Pray, of Dimondale, that were very much enjoyed.

In his inspiring message National Master recalled to his hearers the services of some of Michigan's Grange members to the National Grange, Governor Luce, J. J. Woodman, George B. Horton, N. P. Hull, and others. He told us there were more Granges organized the fiscal year than any other in the past forty years. He outlined some features of education that the Grange was working for "that would build a better 'preparedness' for peace or war than many battle ships." He spoke in strong terms against the saloon. "Do not believe the so-called figures which are not facts, which the liquor interests use to try to prove to the farmer that he needs the brewery as a market for his grain. It takes only 45c worth of corn to make the whiskey that the drinker pays \$16.80 for."

In referring to many of the important legislative achievements of the National Grange, he referred to the rural credit measure as "not what we want, but an opening wedge." He pointed with pride to the fact that "the National Grange had never had to retract from a measure it had advocated until it was made into law, because it came from the common people and was backed by them. This was more than could be said of political parties which changed their policies frequently every four years."

The last event was the awarding of a beautiful flag by State Master Ketcham to the Grange that had the highest score, which was figured on attendance and number of miles traveled. Charlotte Grange won the flag by a narrow margin over Fitchberg, Ovid and Windsor Grange, of Dimondale.

The last of the four big rallies was held at Adrian. It was the biggest and finest of them all. Between 2000 and 3000 Grangers gathered in the largest meeting of its kind the National Master ever attended.

About 1500 joined in a huge parade of about 250 automobiles and floats. The six southeastern counties which had been planning for months for this event were well represented. The parade was a wonderful Grange pageant.

Leading the procession were two beautiful floats. The first was a patriotic float, trimmed in the red, white and blue, with Uncle Sam and Miss Columbia in the seats. The next was a representation of Pomona in orange in honor of the National Master. Azalia band of 26 pieces followed in cars. Hillsdale delegation was headed by a float decorated with its colors of pink and white, with women and children in costume. Wayne county, whose colors were green and white, was headed by a large float on which were ten ladies in costume, extending at arm's length baskets filled with fruit.

Washtenaw had one of the largest floats, a huge truck on which was built a school house filled with 25 people. The inscription on the float was "A School Out of School." Monroe county

was headed by a float decorated in purple and white on which were seated persons representing the four seasons. Jackson county was announced by a float decorated in pure white with the word "Hope" displayed on each side of the car. Lenawee county had one of the finest floats, a car of white filled with the young girls and children. The car was driven by Miss Jessie Illenden, daughter of Lenawee Pomona Master A. F. Illenden, and on the running-boards were children carrying beautiful staffs. Another striking float was a car driven by Mary Porter which was transformed into a yellow yacht which seemed to float along as if on gentle breezes.

A fine program of readings and music followed with welcomes by the mayor and officials of Adrian. Two extracts from National Master's address are worth remembering, in which he said:

"You need not spend time nor money learning Latin; neither is it necessary that you be astronomers. But you should have some knowledge of chemistry in order that you may be familiar with the formation of the soil and the changes in soil formation. You should be a botanist in order that you might understand plant life, and you should be an entomologist that you might understand insect life and know how to intelligently wage war against them."

The speaker showed by illustrations from actual cases how the farm which is worked by a man with such a practical education as he recommended pays better than the one managed by the "ordinary" farmer.

He said that the sacrifice and loss of sending the boys to school to secure such an education is counterbalanced by the returns from their labors after they have found what the started after.

Co-operation of the Grange with the city was a topic that Mr. Wilson spoke on with some feeling. He stated that there has been a general misconception that the Grange, being a farmer's organization, is prejudiced in favor of the farmer to the disadvantage of the city man. The Grange, however, does not take that attitude and is constantly endeavoring by one means or another to knit more closely the bonds that connect the farm and the city. A shorter road between the producer and the consumer is the method by which the Grange can more firmly unite these ties, the speaker stated, and he added that it was the work of the Grange to bring a higher price to the producer without taking any more from the consumer. It has been found from statistics, he said, that the producer gets about 35 per cent of the cost and the middleman 65 per cent. Any man with reason, he said, will admit that the greatest cost should be the cost of production. To change this inverted ratio of cost the Grange is constantly working.

Thus closed the last of the four rally days that will stand out as red-letter days in Grange history in Michigan.

DORA H. STOCKMAN.

Farmers' Clubs

Address all communications relative to the organization of new Clubs to Mrs. J. S. Brown, Howell, Mich.

RALLY.

The Farmers' Clubs of central Michigan will hold a rally at the M. A. C., Wednesday, August 16. It is hoped that many people will take a vacation on this date and spend a day at one of Michigan's beauty spots.

The College authorities have assured us that the buildings will be open that day and that they will co-operate in every way possible.

The picnic grounds are just west of the interurban station and it is here that coffee, tea, lunches or dinners can be secured if one does not care to bring his own basket.

The place of holding the program will be announced during the dinner hour.

Dr. Frank S. Kedzie, President of the M. A. C., and Dr. Eben Mumford, United States Agricultural Expert for Michigan, and others, will be speakers. Everybody is invited. Come.

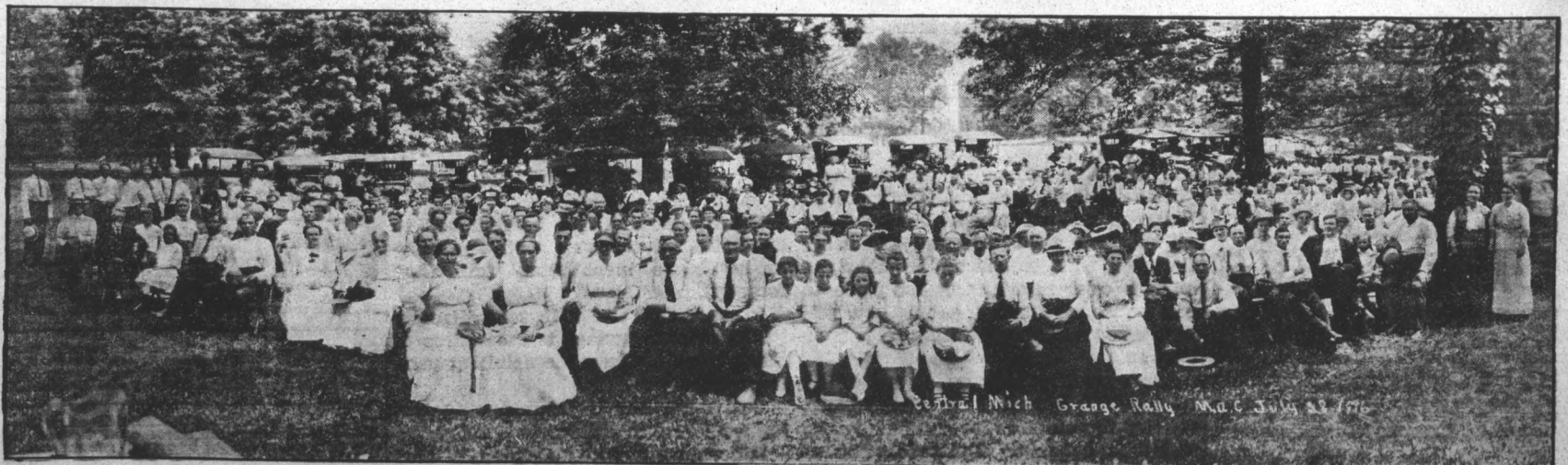
W. L. CHENEY, Chairman,
Mason, Mich.

THE FARMERS' CLUB AS AN EDUCATOR.

In the last issue mention was made of the opportunity, too often unimproved, which exists for profitable educational work along practical lines in every local Farmers' Club, and some subjects were suggested for special discussion.

Another subject which might be taken up with profit is the trend of discussion at the local farmers' institutes to be held during the coming institute season. If it is desirable that any special topic be discussed by authorities along special lines, a simple request from the Farmers' Club would aid in the direction of these programs along profitable lines. Perhaps the organization of a social center movement, the starting of co-operative enterprises in a small way, or a hundred other things which might be mentioned, may occur to the reader as profitable lines of educational work for the Farmers' Club. In such case all that is necessary is for some interested member to take the initiative, since the program committees will generally welcome suggestions along lines which will make the meetings more pleasant and profitable. Examples of educational work conducted by local Clubs would be profitable reading if some of the many such examples which doubtless exist could be published in this department.

Wells-Dayton Club to Picnic.—The Wells-Dayton Farmers' Club held a picnic Wednesday, August 3, at the Banghart Grove, one mile south and three-fourths of a mile west of East Dayton.



A Small Part of the Crowd in Attendance at the Grange Rally Held at M. A. C., at which Oliver Wilson, Master of the National Grange, Spoke. At the left of the picture the following Prominent Grangers are Standing: C. H. Bramble, N. P. Hull, J. C. Ketchum, O. W. Ison, E. C. Pray and Wm. Lovejoy.

POULTRY.

BARRED Rocks Parks 200 Egg Strain with records to 200 eggs a year—\$1.50 per 15 delivered. By Parcel post. **Fred Astling, Constantine, Mich.**

Barred Rock Eggs. Cock birds, hens. Four pullets laid 350 eggs in one year. **W. C. COFFMAN, BENTON HARBOR, MICH.**

GET YOUR ORDER IN EARLY FOR Cockerels from Cousins Northern King Strain Barred Rocks. Write David W. Cousins, North Port, Mich.

Buff Leghorns Exclusively. Now is the time to buy pure bred stock at a big reduction in price. **William A. Smith, Petersburg, Michigan.**

JOHN'S Big, beautiful, hen-hatched Barred Rocks. Eggs, 30, \$2.50; 100, \$7.00. Select matings 15, \$4; 30, \$7.00, all postpaid. Photos. Circulars. **John Northon, Clare, Mich.**

FOR SALE Pure bred S. C. Buff Leghorns and White Plymouth Rock cockerels. **Kietzien & Webster, Bath, Mich.**

Hatching Eggs Buff, Barred, Columbian, Partridge, Silver and White Rocks, Pekin and Rouen Ducks, Sheridan Poultry Yards, Sheridan, Mich. **Chicks Duckling**

Fowlers' Buff Rocks Prices reduced one half, balance of season. Utility eggs \$3.75 for 15, \$1.50 for 30, \$2 for 50, \$3.50 for 100. **R. B. FOWLER, Hartford, Mich.**

Breeding Cockerels White, Brown, Buff and Black Leghorn, Barred Rocks, Rhode Island Reds. Prices Reasonable. **Sunnybrook Poultry Farms, Hillsdale, Michigan.**

ORPINGTONS: —White, Single-Comb Kellstrass 8 wks. old chix Cockerels 75c., pullets \$1. up. **M. E. THOMPSON, Redford, Mich.**

Pine Crest, S. C. White Orpingtons. Bargain, 4 yearling hens and cock, \$3, \$12 and \$15, just one half what they will cost next spring. **MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Michigan.**

300 R. I. RED HENS, Rose and Single Comb. Write for Price List. Sell your monies and buy pure bred R. I. Reds. **INTERLAKES FARM, BOX 39, LAWRENCE, MICH.**

Rose and Single comb Reds, young and old, for sale. Correspondence as to your Red needs invited. **JENNIE BUELL, Ann Arbor, R. 3, Michigan.**

R. and S. C. R. I. Reds, eggs and breeding stock for sale at reduced prices for bal. of season. Delgian hares very reasonable. **O. E. Hawley, Ludington, Mich.**

Rose Comb Brown Leghorns Kulp and Gale strains \$2.50 per 100 eggs. Cockerels 50c each. **CLAUDIA BETTS, Hillsdale, Mich.**

Ferris Leghorns—200 Egg Strain—Eggs, chicks, 8 week-old pullets from hens with records up to 264 eggs. Prize winners at largest shows. Prompt shipment, prices low, quality guaranteed. White Leghorns are best for eggs. We raise thousands. Free catalog and price list gives particulars. Write for it now. **FERRIS LEGHORN FARM, 934 Union, Grand Rapids, Mich.**

RHODE ISLAND REDS and PLYMOUTH ROCKS. Males 6 to 12 lbs. according to age \$2 to \$3; P. R. hens weight 5 to 10 lbs., eggs 15 for \$1.00, 100, \$5; 120, \$6. Mammoth Bronze Tom Turkeys, 5 to 8 lbs. according to age \$6 to \$25, 10 eggs \$3. **A. E. Cramton, Vassar, Mich.**

S. C. WHITE LEGHORN HENS We offer 800 choice S. C. White Leghorn yearling hens at a bargain. These hens have composed our breeding flock for the past season and are the pick of our flocks in size, vigor and egg production. We are making price of \$80 per 100. In lots of 50 or less \$1.00 each. We will be glad to furnish references on our stock. Write **Krentel Bros., East Lansing, Mich. Box 624.**

S. S. Hamburg Eggs reduced prices, balance of season. Free delivery. R. C. white Leghorn hens \$1.00, Belgian Hare Bucks \$5.00 with pedigree. **RIVERVIEW FARM, Vassar, Mich.**

SILVER GOLDEN AND WHITE WYANDOTTES. Eggs from all matings, 150 per 15, \$2.50 per 30 until July 1st. **C. W. Browning, R. 2, Portland, Mich.**

White Wyandotte Cock & Cockerels. Eggs \$1, \$2, \$3, per 15, \$4 per 50, \$7 per 100. **DAVID RAY, 202 Forest Ave., Ypsilanti, Michigan.**

WHITE WYANDOTTES. Eggs \$1.50 per 15, \$2.50 per 30, \$7.00 per 100. From choice stock. **A. FRANKLIN SMITH, Ann Arbor, Michigan.**

DOGS

HOUNDS FOR HUNTING—Fox, Coon and Rabbits, all ages. Send 2 cent stamp. **W. E. LECKY, Holmesville, Ohio.**

FOX, COON, SKUNK, HOUNDS Broke to gun and field, and guaranteed. Fox, coon & rabbit hound pups, from the best of stock—\$5.00 each. Stamp for photos. **H. C. Lyle, Fredericksburg, Ohio.**

BREEDERS' DIRECTORY.

Change of Copy or Cancellations must reach us Ten Days before date of publication.

CATTLE.

ABERDEEN ANGUS

We have a choice lot of Bull Calves, that are 6 to 12 months old and another crop coming. I will be pleased to have you visit our farm, where we have a stock show every day; we will also have a show herd at the Michigan State Fair. **U. L. OLARK, Hunters Creek, Mich. SIDNEY SMITH, Manager.**

ABERDEEN-ANGUS

HERD ESTABLISHED IN 1900. **TROJAN-ERICAS and BLACKBIRDS** only. Also breeders of Percheron, Hackney and Saddle Horses. **WOODCOTE STOCK FARM, Ionia, Mich.**

Pure Bred Aberdeen Angus, a few bulls and heifers one year and older at \$100 each. **GEO. HATHAWAY & SON, OVID, MICHIGAN.**

AYRSHIRES—One of the foremost dairy breeds. The most economical milk producers. Calves for sale. White Leghorn cockerels; Duroc Jersey swine. Michigan School for the Deaf, Flint, Michigan.

MILO D. CAMPBELL CHAS. J. ANGEVINE

BEACH FARM GUERNSEYS

Average yearly production 422.3 lbs. of fat, three fourths of them making their records as two year olds. By the use of a pure bred sire, a big improvement can soon be attained if the right selection is made. The breeding of the Beach Farm Herd is as good as can be found, and we guarantee them to be free from contagious diseases and to be satisfactory in every way or money refunded. Write and let us tell you about them.

CAMPBELL & ANGEVINE,
Coldwater, Michigan.

During the Molting Period

A STARVED fowl molts slowly, the feathers drop out quickly and in great patches and then come in slowly, and if her half-fed condition continues winter will catch her bare. All fowls molt, but they should be kept in a condition that you would only guess they were molting by the tail feathers thinning out. A well-kept fowl will set feathers nearly as fast as they come out, and at no time will show many, if any, bare places. When you find them in this condition hurry up the feed supply. Double it and then some, if you would give the fowls the strength to grow feathers. Good nourishing feeding is especially necessary to develop the tail and wing feathers in the allotted time for a natural molt, ninety days.

Mites and Molting.

A fowl has many mite enemies. Often when you find the feathers coming out about the head and neck you imagine the fowls are hurrying up on the molt, or molting out of season, when it is simply the depluming mite getting in its work at the root of the feathers. There is but one way I know of to effectively get rid of these particular parasites, and this is by dipping the fowls in a good coal tar dip. As these mites get on the roosts, the roosts and poultry houses must be thoroughly disinfected several times in succession to get them free from these mites which will soon ruin any flock.

Another strange mite is the air sack mite. This is a mite so tiny that it will take a strong eye to locate one. They enter the lungs through the pores of the skin, and multiply until the bird dies. Sometimes it seems to die from pneumonia, but more often becomes emaciated and you suspect tuberculosis. These mites will spread to every organ in the body. Sulphur, fed heavily, will often kill them if taken in time. Strong disinfection must be used on roosts, nests, and walls.

The Value of Sunflower Seed.

The value of sunflower seed lies in the oil the seeds contain. This is why sunflower seed is of high value during molting days. I prefer the variety of sunflower that bears the striped seeds, this kind bearing as high as seven heads to the stock. In stacking away sunflower seed for winter days secure it from the reach of mice or English sparrows, for these last will enter any crack in a house that lets them in to the sunflower seeds. Many a time one finds the store of sunflower seed showing only the husks for his share of the work.

Note the hens that molt earliest this year. Those that began molting some time ago should be banded in some way and kept over, as these will be your early winter standby in eggs, and will brood the earliest in the spring. Also, in choosing your breeders this fall for the next season's crop, choose those raised on a good range. Cockerels raised in confinement may be good-sized, well-colored young male birds but they will usually grow into too rangy fowls. The broad-backed, bulky male bird is the one to choose for a breeder.

Selling Surplus Stock.

If you keep an excellent flock of the pure-breds why not try selling some of the growthy pullets by the dozen to your neighbors for next year's stock? You can find an excellent market for all that are good-sized and promising that you wish to spare. By charging enough over regular market price to pay you a reasonable profit, you will find many neighbors willing to patronize you.

Many poultry keepers do not think so, but it is essential to change blood on the female side every few years, and it is better to eliminate some of the old female stock and put in some new every year. Too many of us keep the same stock so long that the laying

stock takes on habits of various kinds, the daughters taking the faults of the mothers.

Indiana.

I. M. SHEPLER.

FEED YOUR CHICKENS SOUR MILK.

Sour milk should not be left out of the feed of growing or laying fowls, winter or summer, if it can be secured at any reasonable cost. It is usually much cheaper and easier to get on the farm than beef scrap or any other substitute and no common substitute except buttermilk will give as good results.

Sour milk for egg-production was given a very careful test at the Missouri Agricultural Experiment Station for a year recently when three 25-bird pens of White Leghorn pullets were fed in almost exactly the same way except that one pen received sour milk, another beef scrap, and the third no meat or animal food whatever. From the sour milk pen the station got 3,275 eggs at a profit of \$28.26; from the beef scrap pen, 2,668 at a profit of \$19.78; and from the no-meat pen, 1,373 eggs at a loss of \$1.00 on the pen for the year.

On many farms the no-meat pen would not have been regarded as losing money because the chickens live mainly on waste grain about the barn lot, but on these farms the profits would be so much greater if buttermilk or sour milk could be fed, that a large possible profit is being lost if the chickens get only the grain and grass they can pick up. They may pick up insects enough to keep them from being on an absolutely no-meat ration, but a part of the farm business that can return an average of \$122 a farm on the thousands of Missouri farms should be systematically fed on the right kind of food.

During the experiment only ordinary good poultry-feeding methods were followed. A little scratch feed was sprinkled in the straw litter deep enough to make the chickens take exercise in getting it. Water was given in clean vessels and a pan of sour milk kept in the sour milk pan. At noon, dry mash was measured into the trough and green feed was often given at the same time especially during the winter. Two or three times a week the fowls were made to eat more of the mash by mixing the dry mash with some liquid to make a wet mash which was fed at the rate of a handful for every four birds.

At night scratch feed was given again and the birds were given all they would eat to send them to roost with full crops. This method of feeding keeps the hens busy all day, gives them good appetites, and supplies all the feed they will use. They should eat about twice as much grain or scratch feed as mash.

These results with White Leghorns are exactly in harmony with those secured elsewhere with fowls of various other breeds except that in some other cases the milk-fed chickens have laid about four times as many eggs as those fed no meat instead of only two or three times as many as in the case of those at the Missouri Agricultural Experiment Station.

POULTRY POINTERS.

Broody hens should be removed to slat-bottomed coops as soon as discovered. Leave them there until they forget it.

Clean fresh water lessens disease. Filthy drinking water is the source of much trouble. Clean the drinking pans frequently.

Soft fresh dirt is insurance against leg weakness in chicks.

If hens are lousy, rub a piece of blue ointment the size of a pea into the skin just beneath the vent and on the underside of the wings.

Reg. Guernsey Bulls, serviceable age, great grand sons of Gov. Chase, also grade Guernsey and Jersey heifers 6 wks old \$20 each. **Avondale Stock Farm, Wayne, Mich.**

VILLAGE FARMS, Incorporated
Grass Lake, Michigan,
GUERNSEY CATTLE
BERKSHIRE HOGS

Guernsey (May Rose) Bull for sale, born Sept. 5, 1913. Splendid animal in every respect, Dam 520 lbs. fat class F. J. K. Blatchford, Auditorium Tower, Chicago, Ill.

Guernsey Bulls of service age and calves from choice. Adv. reg. breeding. **T. V. HICKS, Route 1, Battle Creek, Mich.**

GUERNSEYS—REGISTERED BULL CALVES Containing blood of world champions. **HICKS' GUERNSEY FARM, Saginaw, W. S. Mich.**

Guernsey Bulls, sold three last 10 days—One left Gr. Son Pauline Spootswood. He is a beauty—and you can buy him. **J. M. Williams, No. Adams, Michigan.**

Herefords—One Bull Calf. **ALLEN BROS., PAW PAW, MICH.**

HEREFORDS: 4 Bulls, 4 Heifers. **EARL C. MCCARTY, Bad Axe, Michigan.**

Do You Want A Bull?

Ready For Service.

From a grand daughter of The King of the Pontiacs. Sired by a bull that is more than a bull brother to the Champion Holstein Cow of the World, and whose dam is a 30 lb. 6 1/4 % fat daughter of Pontiac Aggie Korndyke who has more 30 lb. daughters than any other living bull. If you do write for pedigree.

EDWIN S. LEWIS, Marshall, Mich.

HOLSTEIN BULLS FOR SALE

3 of them 1 year old in Nov. By 31 lb. sire. Dams above 21 lbs. as heifers. Price \$100. Younger bulls by son of Johanna McKinley Segis \$50 up. **BLISSVELDT FARMS, Jenison, Michigan.**

FOR SALE

SOME VERY FINE YOUNG BULLS Whose sires have as high as 31 lbs. of butter behind them. As they are young, will make a low price on them. **BIGELOW'S HOLSTEIN FARMS, BREEDSVILLE, MICH.**

HOLSTEINS, a nice straight deep bodied, blocky built bull calf, born Oct. 5th, 1915. His 7 nearest dams have A. R. O. records that average butter 7 days 23.38 lbs., milk 533.36 lbs. **W. B. READER, Howell, Mich.**

30 lb. bull for sale, 2 years old, by a son of King of the Pontiacs. Dam sold for \$1000 in Detroit sale. **Ferd. J. Lange, Sebawing, Mich.**

75 gets Hazel-let grandson of Maplecrest DeKol Parthena and Pontiac Maid 30.2 lb. Born March 26. Dam Pontiac Hesperia 2nd, 14.89 lb; 436.6 lb; her dam's sire brother to sire of world's record cow 31334 lb milk 1 yr. **M. L. McLAULIN, REDFORD, MICH.**

I Have Holstein Bulls, Bull Calves and Cows that I offer for sale. I can show breeding records, in dividuality and attractive prices. **L. E. CONNELL, Fayette, Ohio.**

"TOPNOTCH" Holsteins

By careful retention, for many years, of largest producing females, and use of superior sires, a breeding herd of wonderful quality has been established. We are selling young bulls of this "TOP NOTCH" quality, of serviceable age, at moderate prices. Information, pedigrees, etc., on application. **MCPHERSON FARMS CO., Howell, Michigan.**

FOR SALE Two Holstein Bull Calves

6 months old from 20 lb. dams. **FREEMAN J. FISHBECK, Howell, Michigan.**

Grade up your herd with one of our Holstein bulls. Their six nearest dams on the sire's side average 24 lb butter in 7 da. The semi-official yearly records of three of these dams, including two two-year old heifers, average 842 lb. of butter and 18,000 lb. of milk. Six to nine months of age and from A. R. O. dams. **Foucland Stock Farm, Three Rivers, Mich. Chas. Peters, Herdsman. C. L. Brody, Owner, Fort Huron, Mich.**

HOBART W. FAY,
MASON, MICH.
REGISTERED HOLSTEINS
ESTABLISHED 1904.

CHOICE HOLSTEIN BULLS—all from A. R. O. dams. Entire herd on Semi of. test for yearly average 2-yr.-old just finished year's record of over 15,000 lbs. milk over 1000 lbs. butter record in mature class. **Cherry Creek Stock Farm, M. E. Parmelle, Prop., Billiards, Mich.**

Reg. Holstein Bull Calf. 2 nearest dams average 90 lb. milk per day Pontiac Korndyke and Hengerveld DeKol breeding. Prices right. **John A. Rinke, Warren, Mich.**

FIRST \$100 CHECK

Gets 15 month old, Handsome Thoroughbred Holstein Bull. World record Sire. Dam 26 lb. 3 year old. Have three as good, same age. **C. E. Winters, Augusta, Mich.**

Holstein Calves. 10 heifers, and 2 bulls 15-16ths pure, 5 weeks old, beautifully marked, \$20.00 each, crated for shipment anywhere. **Edgewood Farm, Whitewater, Wis.**

Lillie Farmstead Jersey Cattle. Bull calves from R. of M. Cows, also heifer calves and several bred heifers for sale. **Colon C. Lillie, Cooperaville, Mich.**

Jersey Bulls for Sale from high-producing dams, with testing Assoc. records, also on semi-official test. **O. B. Wenner, R. 6, Allegan, Mich.**

Senior herd bull, Majesty's Wonder 90717, for sale, sire Royal Majesty, Dam Mina's Dewdrop, his full sister Majesty's Butter cup produced 708.2 lbs butter in 1 yr. Sons of Royal Majesty are scarce, here is a chance to get one reasonable, must sell to avoid too close inbreeding, write for particulars, also choice young bulls from above sire. **Alvin Balden, Capac, Michigan.**

Hillside Farm Jerseys A 10 mos. old, solid color bull now offered for sale. Dam is a R. of M. cow with record of 546 lbs. of butter as a 3 yr. old. He is a fine individual. Price right. **C. & O. Donke, Ypsilanti, Mich.**

Maple Lane R. of M. JERSEY HERD offers for sale, tuberculin tested cows, heifers, bulls, and bull calves backed by several generations of R. of M. breeding. **IRVIN FOX, Allegan, Michigan.**

JERSEY BULL CALF FOR SALE

Ready for service. Majesty—Raleigh breeding. **Meadowland Farm, Waterman & Waterman, Ann Arbor, Mich.**

Veterinary.

CONDUCTED BY W. C. FAIR, V. S.

Mare Fails to Come in Heat.—I have a mare that is raising a colt that fails to come in heat. H. P., Davison, Mich. Give her 1/2 dr. ground nux vomica, 1 dr. powdered capsicum and 2 drs. of ground ginger at a dose in feed night and morning. A forced service would perhaps have the desired effect of bringing her in heat.

Suppurative Glands.—I have a brood mare that has had suppurative udder trouble and at present there are several little holes leading into bag which communicate to each other. These abscesses have been opened by our local Vet. who prescribed a lotion for me to inject into openings. Her appetite is poor and I would like to know if I should breed her again? W. R. D., Sears, Mich.—Occasionally inject one part tincture iodine and nine parts of water into udder openings two or three times a week, and continue using the treatment your Vet. prescribed. After a mare has had much udder trouble she seldom makes a good brood mare.

Barrenness.—I wish you would tell me what to do for my cow, or give her, to bring her in heat. M. F. D., Kalamazoo, Mich.—First of all you must understand that there is no certainty in the treatment, regarding the bringing of your cow in heat, either from the action of drugs or a forced service. Give 1 dr. of ground nux vomica and 2 drs. of ground capsicum at a dose in feed twice a day—this will perhaps aid in bringing her in heat. I have known a forced service to have a very good effect; however, you may be disappointed no matter what you do or give.

Melanotic Tumors.—I have a gray mare with tumors on her neck and tail. These bunches also extend from throat to ears, and I would like to know what can be done for her. The bunches on tail discharge a black colored fluid which is rather offensive. E. M. F., Glennie, Mich.—Unless these black tumors can be cut out, which is usually easily accomplished, no other treatment will have much effect. In exceptional cases they prove cancerous, as they usually are in man. These black pigment tumors are common in gray and in white horses on the naturally black parts of skin on the root of the tail.

Enlarged Glands.—I have some pigs three months old with some bunches on hind leg that makes them lame. I am feeding them separator milk and middlings; besides, they run on grass where they have abundance of green feed. C. R. M., Pierson, Mich.—Paint bunches with tincture of iodine twice a week.

Indigestion.—We have a mare that had colt two and a half months ago; she is very thin and has occasional spells of indigestion. Our local Vet. has been successful in curing each attack, but fails to prevent it. I feed her bran and oats and keep her on dry feed, but of course she does not give much milk. A. M., Kalamazoo, Mich.—If your mare was fed nothing but grass of a good quality she would perhaps get over it entirely. Indigestion is only partially preventable and this matter is in the hands of the feeder. Proper feeding with regular exercise is the only preventative.

Contagious Abortion.—I have a sow 10 months old that was due to farrow August 20, but lost her pigs July 27. This sow was fed on wheat middlings and some corn meal made into a thin slop; besides she ran on pasture where she had plenty of vetch and June grass. This sow was small and she had 12 pigs. W. E. H., Boyne City, Mich.—A small sow seldom does well if they have 12 pigs the first litter. It is possible that this large number were too crowded in the uterus and in order to relieve this, nature brought on miscarriage, or she may have met with an accident. However, she may perhaps suffer from contagious abortion.

Heifers Fail to Come in Heat.—I have two heifers that freshened six or seven weeks ago and neither of them have been in heat since. Both of them appear to be healthy and in good condition. G. M. B., Lake Ann, Mich.—Give each heifer a dessertspoonful of ginger and a small teaspoonful of powdered capsicum at a dose in soft feed twice a day.

Leucorrhoea.—I have a mare troubled with whites and would like to know what can be done for her. A. N., Mikado, Mich.—Give 1 dr. of powdered sulphate iron at a dose in feed three times a day. Dissolve 2 drs. of carbolic acid and 1/2 dr. of tannic acid in one quart of warm water and wash out the vagina once or twice a day. The mare should be well fed.

HOLSTEINS

Dispersion Sale at Wixom, Mich., Aug. 15, 1916

Over 40 head of choice stock including the herd of E. M. Moore of Wixom and drafts from the herds of M. A. Smith and Son of Wixom and Musolf Bros. of South Lyon. Several A. R. O. cows with good records, young heifers from A. R. O. dams and bred to one of the choicest bred bulls in the state, in fact an extra good lot of stock all the way through. Wixom is easy to reach on either Grand Trunk or P. M. Rys. Sale will be held at farm of E. M. Moore 1 1/2 miles south of village. Autos will meet all trains the morning of the sale. Write for catalogues.

Duroc Jersey Herd Boars

Special Offering of High Class Fall Boar Pigs. Breeding and Individuality good enough for breeders who appreciate the best.

Also some good farmer's boars. This is the best lot of fall pigs we have ever had to offer. A cordial invitation is extended to visit the farm and inspect the stock. If you wish one of the best young Jersey bulls in Michigan we have him for sale. For further particulars, address,

Brookwater Farm, Swine Dept., Ann Arbor, Mich.

DEATH TO HEAVES

NEWTON'S Heaves, Cough, Distemper and Indigestion Cure.

Some cases cured by 1st or 2nd \$1 can. Three cans are guaranteed to cure heaves or money refunded.



The original and the up-to-date Standard Veterinary Remedy for Heaves; free booklet explains fully. 34 years sale and veterinary use.

CURES HEAVES BY CORRECTING CAUSE—INDIGESTION. IT'S A GRAND COMBINATION AND WORM EXPELLER

Safe. Most economical. Excellent for Cattle and Hogs. \$1.00 per can at dealers, at same price by parcel post. THE NEWTON REMEDY CO., Toledo, Ohio.

ONLY \$50 DELIVERED: Handsome Holstein bull calf, 3/4 white; size 25 lb. butter bull; dam 18.30 lbs. A. R. O. Large and heavily boned. ROUGEON FARM, Detroit.

REGISTERED JERSEY BULLS FOR SALE 1 yearling, and Bull calves from 8 to 10 months old. Also 3 cows. Write your order to SMITH-PARKER, R. D. No. 4, Howell, Michigan.

BIDWELL SHORTHORNS

For "Beef and Milk" Registered bulls, Scotch-topped roans, reds and whites for sale. Farm at N.Y.C. Depot; also D. T. & I. R'y. Address G. R. Schroder Mgr. BIDWELL STOCK FARM Box B, Tecumseh, Mich.

Shorthorn Cattle of both Sex for Sale W. W. KNAPP, Howell, Michigan.

DAIRY BRED Shorthorns of best Bates strains, young bull 8 months old for sale, price \$150. J. B. HUMMEL, MASON, MICHIGAN.

FOR SALE—Reg. Short Horn Bulls by Maxwalton Monch 2nd, a son of Avondale, from 8 to 10 mos. old. John Schmidt, Reed City, R. No. 5, Michigan.

SHORTHORN COWS FOR SALE: No Bulls at present. R. R. Station, Elsie. H. B. PETERS, Carland, Mich.

Shorthorn AND POLLED DURHAMS FOR SALE. Have red roan and white. Have over 100 head in herd. C. Carlson, Leroy, Mich.

Shorthorns—Dairy or beef bred. Breeding stock all ages for sale at farmers prices. C. W. Crum Secy. Cant. Mich. Shorthorn Breeders' Assn. McBride, Mich.

Two yr. red shorthorn Bulls. Roan Calf 9 mo. old. Poll Angus Bull calf, 3 mo. old, not reg. Prices to move quick. CHASE'S Stock Farm, Mariette, Mich., R. 1.

Registered Shorthorn Cattle, young bulls and heifers \$100.00, bred cows and heifers \$150.00. Write, W. J. BELL, ROSE CITY, MICHIGAN.

Milking bull \$250. Young bulls and heifers. DAVIDSON & HALL, TECUMSEH, MICHIGAN.

REGISTERED SHORTHORN 1 heifer 7 mo. old, 1 heifer 1 yr. old. H. W. MANN, Danville, Mich.

Red Polled Cattle. Have a fine young bull and O. I. C. pigs for sale. John Berner and Son, Grand Ledge, Mich.

FOR SALE—Two Reg. Holstein cows, due to freshen in Aug. Age 4 and 13 yrs. Both have A. R. O. records. Price for both \$325. Chas. I. Cook, Fowlerville, Mich. Box 438.

NOTES.

Berkshires of best breeding, of various ages, either sex, all registered stock, no akin, special reduced price. Write your wants quick. Mitchell's Lakeside Farms, R. 2, Bloomingdale, Mich.

SWIGARTDALE FARM

HOLSTEINS AND BERKSHIRES

We have for sale a fine bull calf born March 6th, nicely marked, dam a nine years old three year old, price \$300. In Berkshires we have a nice lot of fancy fall heifers, sired by Sensational Chalmers Masterpiece 2nd, also spring boars, these are all large high class animals, of unsurpassed breeding, our prices are right, and we guarantee to please, or return your money.

Swigartdale Farm, Petersburg, Mich.

The Very Finest Berkshire Pigs Cheap C. S. BARTLETT, Prop., Pontiac, Michigan

Berkshires. I have 5 choice fall gilts bred for Sept. farrowing at \$25 each for local delivery. A. A. PATULLO, R. 4, Deckerville, Mich.

ROYALTON Bred Berkshires. Pigs farrowed by Royalton Queen May 8th, both sexes, registered, nicely shaped and marked. Many others at prices to unload heavy stock. D. F. VALENTINE, Supt. Temperance, Mich.

DUROC JERSEYS

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Duroc Jersey Sows and gilts bred for early Sept. farrow. Spring pigs, either sex. E. D. Heydenberk, Wayland, Mich.

For Sale, Duroc Jerseys, choice breeding spring pigs either sex. Prices right. John McNicol, Station A, R. 4, Bay City, Mich.

DUROC Jerseys. Apr. pigs either sex, boars ready for service and a few bred sows for Sept. and Oct. Some Holstein cows bred for fall. E. H. Morris, Monroe, Mich.

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Duroc Jerseys. Sows Bred for Aug. and Sept. litters, also early Spring Boar pigs. M. A. BRAY, OKEMOS, (Ingham Co.) Mich.

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CHESTER WHITES Sows bred for Sept. farrow, spring pigs in pairs, not akin. F. W. ALEXANDER, Vassar, Mich.

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